VHF FM TRANSCEIVER

TK-6110

SERVICE MANUAL

KENWOOD

B51-8519-00 (N) 1113



CONTENTS

GENERAL

INTRODUCTION

SCOPE OF THIS MANUAL

This manual is intended for use by experienced technicians familiar with similar types of commercial grade communications equipment. It contains all required service information for the equipment and is current as of the publication data. Changes which may occur after publication are covered by either Service Bulletins or Manual Revisions. These are issued as required.

ORDERING REPLACEMENT PARTS

When ordering replacement parts or equipment information, the full part identification number should be included. This applies to all parts : components, kits, or chassis. If the part number is not known, include the chassis or kit number of which it is a part, and a sufficient description of the required component for proper identification.

PERSONNEL SAFETY

The following precautions are recommended for personnel safety :

- DO NOT transmit if someone is within two feet (0.6 meter) of the antenna.
- DO NOT transmit until all RF connectors are verified secure and any open connectors are properly terminated.
- SHUT OFF and DO NOT operate this equipment near electrical blasting caps or in an explosive atmosphere.
- All equipment should be properly grounded before power-up for safe operation.
- This equipment should be serviced by a qualified technician only.

PRE-INSTALLATION CONSIDERATIONS

1. UNPACKING

Unpack the radio from its shipping container and check for accessory items. If any item is missing, please contact KENWOOD immediately.

2. LICENSING REQUIREMENTS

Federal regulations require a station license for each radio installation (mobile or base) be obtained by the equipment owner. The licensee is responsible for ensuring transmitter power, frequency, and deviation are within the limits permitted by the station license.

Transmitter adjustments may be performed only by a licensed technician holding an FCC first, second or general class commercial radiotelephone operator's license. There is no license required to install or operate the radio.

3. PRE-INSTALLATION CHECKOUT

3-1. Introduction

Each radio is adjusted and tested before shipment. However, it is recommended that receiver and transmitter operation be checked for proper operation before installation.

3-2. Testing

The radio should be tested complete with all cabling and accessories as they will be connected in the final installation. Transmitter frequency, deviation, and power output should be checked, as should receiver sensitivity, squelch operation, and audio output. Signalling equipment operation should be verified.

4. PLANNING THE INSTALLATION

4-1. General

Inspect the vehicle and determine how and where the radio antenna and accessories will be mounted.

Plan cable runs for protection against pinching or crushing wiring, and radio installation to prevent overheating.

4-2. Antenna

The favored location for an antenna is in the center of a large, flat conductive area, usually at the roof center. The trunk lid is preferred, bond the trunk lid and vehicle chassis using ground straps to ensure the lid is at chassis ground.

4-3. Radio

The universal mount bracket allows the radio to be mounted in a variety of ways. Be sure the mounting surface is adequate to support the radio's weight. Allow sufficient space around the radio for air cooling. Position the radio close enough to the vehicle operator to permit easy access to the controls when driving.

4-4. DC Power and wiring

1. This radio may be installed in negative ground electrical systems only. Reverse polarity will cause the cable fuse to blow. Check the vehicle ground polarity before installation to prevent wasted time and effort.
2. Connect the positive power lead directly to the vehicle battery positive terminal. Connecting the Positive lead to any other positive voltage source in the vehicle is not recommended.
3. The cable provided with the radio is sufficient to handle the maximum radio current demand. If the cable must be extended, be sure the additional wire is sufficient for the current to be carried and length of the added lead.

GENERAL / SYSTEM SET-UP

5. INSTALLATION PLANNING – CONTROL STATIONS

5-1. Antenna system

Control station. The antenna system selection depends on many factors and is beyond the scope of this manual. Your KENWOOD dealer can help you select an antenna system that will best serve your particular needs.

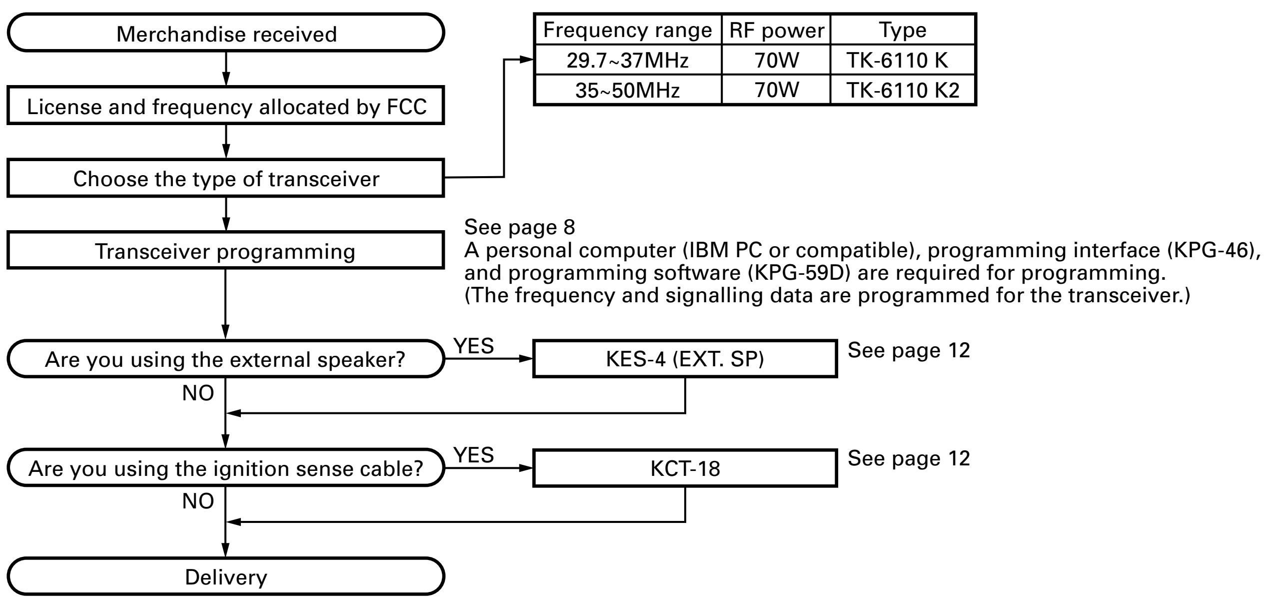
5-2. Radio location

Select a convenient location for your control station radio which is as close as practical to the antenna cable entry point. Secondly, use your system's power supply (which supplies the voltage and current required for your system). Make sure sufficient air can flow around the radio and power supply to allow adequate cooling.

SERVICE

This radio is designed for easy servicing. Refer to the schematic diagrams, printed circuit board views, and alignment procedures contained in this manual.

SYSTEM SET-UP

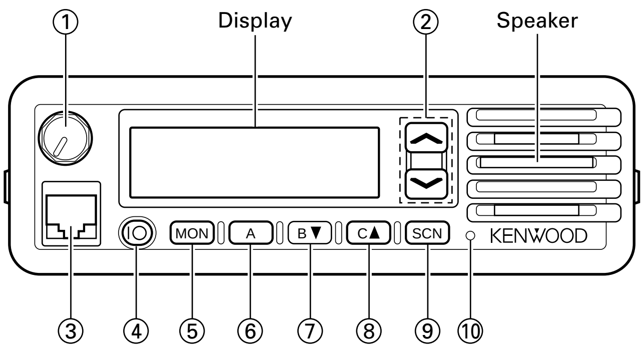


Frequency range	RF power	Type
29.7~37MHz	70W	TK-6110 K
35~50MHz	70W	TK-6110 K2

OPERATING FEATURES

1. Controls and Functions

1-1. Front Panel



① Volume control

Turn clockwise to increase the volume. Turn counter-clockwise to decrease the volume.

② ︿/﹀ keys

Press these keys to activate their programmable functions. The default settings of these keys are "Channel Up" (︿) and "Channel Down" (﹀).

③ Microphone jack

Insert the microphone plug into this jack.

④ IO (Power) switch

Press to switch the power ON. Press and hold for approximately 1 second to switch the power OFF.

⑤ MON key

Press MON to activate its programmable function. The default setting of this key is "Monitor".

⑥ A key
⑦ B▼ key
⑧ C▲ key

Press these PF (programmable function) keys to activate their programmable functions. The default setting of these keys is "No Function".

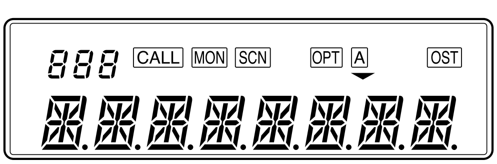
⑨ SCN key

Press SCN to activate its programmable function. The default setting of this key is "Scan".

⑩ LED

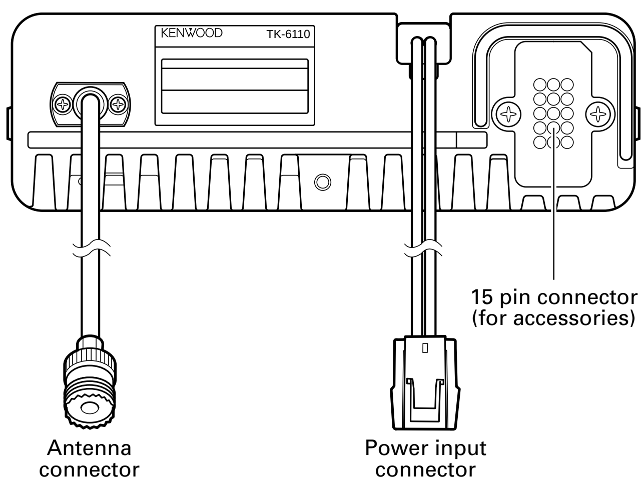
Lights red while transmitting. Lights green while the selected channel is busy. Blinks orange when you receive a call by 2-Tone or DTMF.

1-2. Display

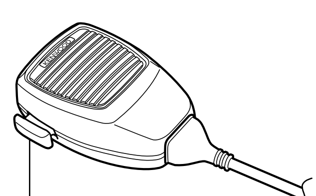


	Displays the operating Channel number, the Channel name, and the transceiver status.
888	Displays the operating channel number and the channel status: **P** indicates a Priority channel **HC** indicates a Home Channel **tA** indicates Talk Around mode
CALL	Flashes when a call is received by DTMF or 2-Tone signaling. Appears during and after transmitting if set by the dealer.
MON	Appears when signaling squelch is turned OFF.
SCN	Appears while scanning is in progress.
OPT	Appears when the optional scrambler board is enabled.
▼	Appears when the selected channel is in the scanning sequence.
A	Appears when Aux is ON.
OST	Appears when Operator Selectable Tone is enabled.

1-3. Rear Panel



1-4. Microphone



OPERATING FEATURES

2. Scanning

2-1. Start Scanning

You can start scanning when 1 priority channel and at least 1 ADD channel, or 2 or more ADD channels are selected. The transceiver must be in the normal receiving mode (releasing PTT).

Press the key programmed to the scan, the scan starts. The "SCN" (scan) icon appears on the main display and "SCAN" or revert channel appears on the 8-digit alphanumeric display.

2-2. Stop Scanning

The scan stops temporarily if the following conditions are satisfied.

1) A carrier is detected, then signalling matches on channel for which receive the signalling is set by the programming software.
2) A carrier is detected on the channel for which receiving signalling is not set by the programming software or when the monitor (signalling cancel) function is activated.

2-3. Types of Scan Channel

1) Priority channel is the most important channel for the scan, and always detects a signal during scan and when the scan stops temporarily.
2) Non-priority channels detects a signal during scan and when scan stops temporarily.

2-4. Setting Priority Channel

Priority channel can be set as follows with the programming software (KPG-59D).

1) Specify priority channel as fixed priority channel.
2) Make selected channels, priority channels.

2-5. Scan Type Depending on the Priority Channel

1) When no priority channels are set : Only the non-priority channels are scanned.
   If the transceiver stops on a non-priority channel, priority channel is still checked for signals at the specified time intervals.
   If the transceiver detects a signal on a priority channel, it pauses at the priority channel and starts receiving the calls.
2) When priority channel is set : Either priority channel is scanned.
   If a priority channel stops temporarily, it stops until there is no signal on the priority channel.

2-6. Revert Channel

The revert channel is used to transmit during scanning and set by the programming software (KPG-59D).

1) Last called channel
   The transceiver reverts to the last called channel during the scan.
2) Last used channel
   The transceiver reverts to the last used (transmitted) channel during scan. "Last used" revert channel includes talkback function.
3) Selected with talkback
   The transceiver reverts to the channel before scanning or the channel that you changed during scan.
4) Selected channel
   The transceiver reverts to the channel before scanning or the channel that you changed during scan.
   While the transceiver pauses scanning, the revert channel becomes the channel you selected with [CH UP], [CH DW], [CH1] to [CH5] in the last step.
5) Priority with talkback
   The transceiver reverts to the priority channel.
   If you press PTT during a resume timer (dropout delay time, TX dwell time) or calling, you can transmit on current channel to answer to the call however revert channel is set to priority channel.
   After resume time, scan re-starts and transmission channel is return to priority channel.
6) Priority
   The transceiver reverts to the priority channel.

2-7. Scan End

When you press the key once again, programmed to the scan function during scan mode, the scan ends.

The scan icon "SCN" and "SCAN" or revert channel (programmable) display goes off.

2-8. Temporarily Delete/Add

It is possible to delete or add channel temporarily during scan. When scan stops on unnecessary channel for example by interference of the other party, activate the delete/add function (for example press the key), then that channel is deleted temporarily and scan re-start immediately.

When you would like to add the deleted channel temporarily to scan sequence, select the desired (deleted) channel during scan, activate the delete/add function (for example press the key) before scan re-start.

That channel is added temporarily to scan sequence. The temporary deleted or added channels are returns to pre-set delete/add, when the transceiver exits from scan mode.

3. Optional Features

You can use these features using the programming software (KPG-59D).

3-1. Beep Tones

The beep tones (power on tone, control tone, warning tone, alert tone) are individually programmable to the fixed level 0 to 31 or follow the mechanical volume position.

3-2. Minimum Volume

The minimum volume is programmable (0 to 31). The transceiver remains the minimum volume level however the mechanical volume position is set to zero.

3-3. BCL (Busy Channel Lockout) Override

You can transmit in spite of Busy Channel Lockout situation. For example : To make an emergency voice call.

To transmit under busy channel lockout situation, press PTT once more within approx. 500ms after the PTT release.

OPERATING FEATURES

3-4. Sub LCD Display

You can use 3-digit 7-segment the display to display the channel number. It is useful when the main (8-digit 13-segment) display indicates channel name.

3-5. Emergency Channel Display

The transceiver can be programmed to display "EMERGENCY" channel name when it is in emergency mode.

If you set to "off" by KPG-59D the transceiver shows selected group/channel/status before entering to the emergency mode however the transceiver is in an emergency mode.

3-6. Clear to Transpond

The transceiver waits the transpond of 2-Tone/DTMF if channel is busy until channel open. This feature replies to the transpond signal when the caller returns to receive.

3-7. Mode (Enable/Disable)

The transceiver has many special modes mainly for maintenance.

· Panel Test mode
· Clone mode
· Main programming mode

It is possible to set enable/disable for each mode. We recommend to set these mode to Disable after set up to save contents.

3-8. ID

The transceiver is capable to have ID. The format is DTMF. The timing that the transceiver sends ID is programmable.

Begin of TX : Connect ID is send on beginning of transmission.
End of TX : Disconnect ID is send on end of transmission.
Both : Connect ID is send on beginning of transmission and disconnect ID is send on end of transmission.
Off : Sending ID function is disabled.

There is also "PTT ID" setting for each channel. Refer "PTT ID" of channel feature.

3-9. OST (Operator Selectable Tone)

The transceiver is capable to have "OST" function and 16 tone pair (QT/DQT) with max 8-digit name for each tone pair.

• "OST" Back Up

The transceiver is programmable the selected "OST" code is memorized or not. If you set to Disable (no memorized), the "OST" function always starts at "off".

3-10. "TOT" (Time-Out Timer)

The transceiver has the "TOT". This parameter selects the period of time users can continuously transmit.

When the selected period passes, the transceiver generates an warning tone and stops the transmission.

3-11. "TOT" Pre-Alert

The transceiver has "TOT" pre-alert timer. This parameter selects the time at which the transceiver generates "TOT" pre-alert tone before "TOT" is expired.

"TOT" will be expired when the selected time passes from a TOT pre-alert tone.

3-12. "TOT" Re-Key Time

The transceiver has "TOT" re-key timer. This timer is the time you can not transmit after "TOT" exceeded. After "TOT" re-key time expired you can transmit again.

3-13. "TOT" Reset Time

The transceiver has "TOT" reset timer. This timer is the minimum wait time allowed during a transmission that will reset the "TOT" count.

"TOT" reset time causes the "TOT" to continue even after PTT is released unless the "TOT" reset timer has expired.

3-14. Signalling

Signalling "AND/OR" sets the audio unmute condition for any channel programmed with the option signalling (2-Tone/ DTMF).

AND : "AND" requires both the valid option signalling and the programmed QT/DQT to be received for audio to unmute (and initiate an option signalling decode alert).

OR : "OR" requires either the valid option signalling or the programmed QT/DQT to be received for audio to unmute (an option signalling decode alert is only initiated if the proper option signalling is decoded).

4. Channel Features

You can use these features using the programming software (KPG-59D).

4-1. Alphanumeric Display (Channel Name)

The programming software (KPG-59D) enables you to set the alphanumeric display for channel name. The total text size of channel name are 8-digits.

The characters can be used as shown in Figure 1.

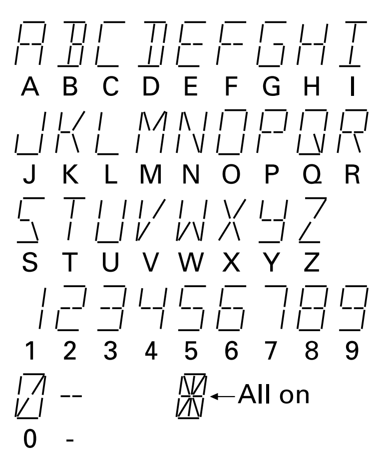


Fig. 1

OPERATING FEATURES

4-2. Option Signalling

The transceiver is programmable to the option signalling (2-Tone decode program 1, 2-Tone decode program 2, 2-Tone decode program 3, DTMF decode) to each channel. It is useful to receive an individual call.

Receive format is selectable "AND" or "OR" with QT/DQT. The radio response of option signalling is programmable call Alert and "Transpond" for each option signalling (2-Tone decode program 1, 2-Tone decode program 2, 2-Tone decode program 3, DTMF).

4-3. PTT ID

PTT ID provides a DTMF ANI to be sent with every time PTT (connect ID at beginning of transmission, disconnect ID at end of transmission, or both).

You can program PTT ID "on" or "off" for each channel. The contents of ID are programmed for each transceiver.

4-4. Busy Channel Lockout

Transmission is inhibited when the channel is busy. It is able to set this feature "Yes" or "No" for each channel.

4-5. Scan Delete/Add

Scanning "delete/add" is programmable for each channel. Set the currently selected channel required to include in the scan sequence to "add".

The operator can change the "delete/add" information using the key programmed to "delete/add" function.

5. Key Functions

5-1. No Function

Sounds error operation beep, and no action will occur. Use this function when the transceiver is required to be more simple operated.

5-2. AUX.

The AUX function can be programmed for push key.

If this key is pressed, the "A" icon lights on the LCD and the AUX port which is contained in 15-pin connector located at the rear of the transceiver goes to low level.

If pressed again, the "A" icon goes off and the AUX port goes to Open-collector.

5-3. Channel Down

If this key is pressed once, the channel number decreases by one step. If this key is hold down, the channel number decreases continuously.

5-4. Channel Up

If this key is pressed once, the channel number increases by one step. If this key is hold down, channel number increases continuously.

5-5. Channel Name

This key switches the LCD display between the current channel number and programmed channel name.

5-6. Delete/Add

This key switches the currently displayed channel between "Delete" and "Add".

The "Add" channel contained in the scan sequence, and "Delete" channel is not contained. In the scan mode, this key switches the channel delete or add temporarily.

5-7. Home Channel

Press this key once, the channel switches to the pre-programmed home channel. Press this key again, the channel goes back to the previous channel.

5-8. Monitor

Monitor the channel before a transmission. Press this key once, "MON" appears and unmutes speaker if a carrier is present, regardless of the specified signalling (including option signalling). Press this key again, "MON" disappears and mutes speaker.

Press this key after the Option Signalling is matched, the Option Signaling is reset. DBD (Dead Beat Disable) mode is not reset by this operation.

Press and hold the Monitor key for 2 seconds to disable the squelch.

5-9. Operator Selectable Tone

When this key is pressed, the "OST" icon lights and Encode/Decode QT/DQT is switched to the OST Tone pair. If pressed again, the "OST" icon goes off and Encode/Decode QT/DQT returns to KPG-59D pre-set.

When this key is held down for 1 second, the transceiver enters "OST Select Mode". In this mode, the display shows OST No. or OST Name which is set to the channel and operator can select one of OST Tone pair using UP key and DW key.

If pressed this key again, the displayed OST code is memorized to the channel, the transceiver exits from the OST Select Mode, returns to normal channel display and "OST" icon lights.

16 kinds of tone pair for OST can be programmed by KPG-59D. OST is useful to access the repeater with same radio frequency and different tone (QT/DQT).

5-10. Scan

Press this key starts scanning. Pressing this key stops scanning.

5-11. Squelch Level

The preset squelch level is varied in user mode (0 to 15). Press the key programmed to "squelch level", the transceiver enters to "squelch level adjust mode".

The squelch level can be adjusted by ∧/∨. Press the key programmed to "squelch level" again, the adjusted level is memorized and returns to the normal user mode.

5-12. Talk Around

Press this key, the transceiver uses the receive frequency and the tone for transmission.

The operator can call the other party directory (without repeater). Press this key again, the talk around function goes off.

5-13. Emergency Call

When the Emergency function (key) is activated, the radio enters the “Emergency Mode”.

In this mode, the radio automatically switches to the programmed “Emergency Channel” and starts transmission with the Emergency ID Code programmed in an installed ANI Board (dependent on ANI board capabilities and programming). The LCD display (Emergency Text) and the TX LED operation are dependent on the “Emergency CH Display” settings.

6. 2-Tone

2-Tone signalling opens the squelch only when the RADIO receives a proper 2-Tone code that is the same as the pre-programmed 2-Tone for the channel. When the RADIO receives a 2-Tone code, the CALL icon flashes.

If Transpond has been programmed, the RADIO will return an acknowledgment signal automatically after receiving the 2-Tone code.

If Alert Tone has been programmed, an Alert Tone sounds after receiving a 2-Tone code. Unmute condition is canceled and the CALL icon goes off when ; (1) pressing the [MON] Key, (2) hanging the microphone on its hook, (3) muting continues for 10 seconds. (If “Auto Reset” has been programmed)

7. DTMF

DTMF Signalling opens the squelch only when the RADIO receives a proper DTMF code that is the same as the pre-programmed “Primary Code (Individual ; 1~7digits)” or “Secondary Code (Group ; 1~7digits)”. When the RADIO receives a correct code, the CALL icon flashes.

If Transpond has been programmed, the RADIO will return an acknowledgment signal automatically after receiving the DTMF code.

If Alert Tone has been programmed, an Alert Tone sounds after receiving a DTMF code. Unmute condition is canceled and the CALL icon goes off when ; (1) pressing the [MON] Key, (2) hanging the microphone on its hook, (3) muting continues for 10 seconds (If “Auto Reset” has been programmed), and (4) receiving reset code. (Primary code + “#” or secondary code + “#”)

8. Data Programming (PC Mode)

8-1. Preparation and Connection

The TK-6110 transceiver is programmed by using a personal computer, programming interface cable KPG-46, and programming software KPG-59D.

The programming software can be used with an IBM-PC or compatible machine. Figure 2 shows the setup for programming.

8-2. Programming Interface Cable KPG-46 Description

The KPG-46 is required to interface the transceiver with the computer. It has a circuit in its D-sub 25pin connector case that converts RS-232C logic level to TTL level.

KPG-46 is used to connect between transceiver microphone connector and RS-232C serial port of computer.

8-3. Programming Software KPG-59D Description

KPG-59D is the programming software for TK-6110 supplied on two 3.5" floppy disks. This software runs under MS-DOS version 3.1 or later, and Windows MS-DOS prompt on an IBM-PC or compatible machine.

The data can be input to or read from TK-6110 and edited on the screen. The programmed or edited data can be printed out. It is also possible to tune the transceiver.

We recommend that install KPG-59D for example to harddisk first then use it.

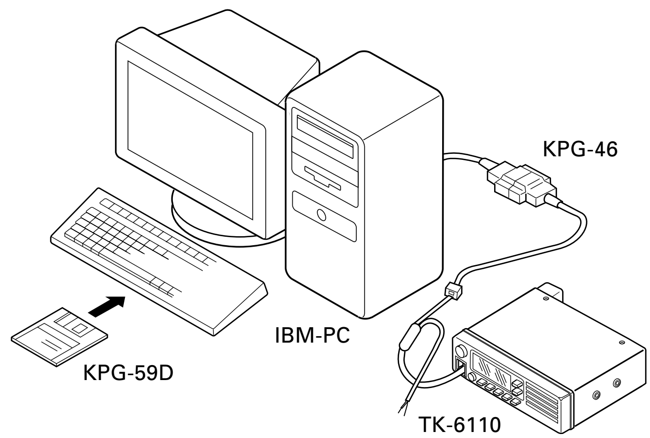
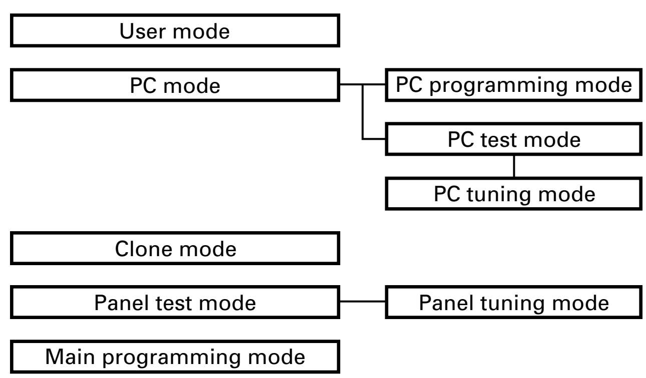


Fig. 2

REALIGNMENT

1. Mode



Mode	Function
User mode	Customer use this mode
PC mode	Communication between the radio and PC (IBM compatible). It requires the KPG-59D.
PC programming mode	Frequency, signalling and features write to the radio and read from the radio.
PC test mode	Check the radio using the PC. This feature is included in the FPU.
Panel test mode (Refer to ADJUSTMENT)	Dealer uses to check the fundamental characteristics.
Main programming mode	Re-write to firmware of the flash ROM.

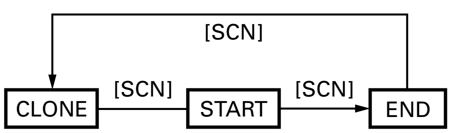
REALIGNMENT

2. How to Enter Each Mode

Mode	Operation
User mode	Power on
PC mode	Turn on the transceiver. Then, set the transceiver to PC mode from the menu in KPG-59D.
Panel test mode	Hold down the [MON] key, turn the radio power on.
Main programming mode	Hold down the [A] key, turn the radio power on.

3. Clone Mode

1. Turn the master side transceiver power on with the [SCN] key held down. The master side transceiver displays "CLONE".
2. Set the power switch on the slave side transceiver to ON.
3. Connect the cloning cable (E30-3382-05) between the master side transceiver (source) and slave side transceiver (clone).
4. Press the [SCN] key on the master side transceiver to start cloning.
5. The TX LED on the master side transceiver flashes when cloning starts and an "END" message appears when cloning ends.
6. The BUSY LED on the slave side transceiver flashes.
7. When a problem occurs during cloning, an "ERROR" message appears on the slave side transceiver.
8. Pressing the [SCN] key sets clone mode again.



4. Main Programming Mode

4-1. Preface

Flash memory is mounted on the transceiver. This allows the transceiver to be upgraded when new features are released in the future. (For details on how to obtain the firmware, contact Customer Service.)

4-2. Connection Procedure

Connect the transceiver to the personal computer (IBM PC or compatible) with the interface cable (KPG-46). (Connection is the same as in the PC Mode.)

4-3. Programming

1. Set the transceiver to Main Programming Mode.
2. Connect the KPG-46 to the transceiver.
3. Start up the programming software (KPG-59D), select "firmware program" in the "Program" item, and press the Return key on the personal computer. This starts up the firmware programmer.
4. The top screen is displayed. Press any key to advance to the next screen.
5. Set the communications speed (normally, 115,200bps) and communications port in the Setup item.
6. Set the firmware to be updated by File select.
7. Held down the [A] key. Turn the transceiver power on. Until the display change to "PROG1152"
8. Check the connection between the transceiver and the personal computer, and make sure that the transceiver is in the Main Programming Mode.
9. Press F10 on the personal computer. A window opens on the display to indicate progress of writing. When the transceiver starts to receive data, "PG" is appeared on 2 digit sub display.
10. If writing ends successfully, the TX LED on the transceiver lights and the checksum is displayed.
11. If you want to continue programming other transceivers, repeat steps 5 to 8.

Notes :

- To start the Firmware Programmer from KPG-59D, the Fpro path must be set up by KPG-59D setup.
- This mode cannot be entered if the Main Programming mode is set to Disable in the Programming software (KPG-59D).

4-4. Function

1. If you press the [SCN] key while "PROG1152" is displayed, the checksum is displayed. If you press the [C] key while the checksum is displayed, "PROG1152" is redisplayed.
2. A transmission speed can be selected by pressing the [C] key while "PROG1152" is displayed.

115200bps : PROG1152
19200bps : PROG 192
38400bps : PROG 384
57600bps : PROG 576

Note :

Normally, write in the high-speed mode.

5. Panel Test Mode

Setting method refer to ADJUSTMENT.

INSTALLATION

1. Optional Voice Scrambler Function

The optional voice scrambler function can be used by two methods.

1. Assign this function to any programmable keys by using the programming software (KPG-59D).
   When the programmed key is pressed, the OPT indicator appears and optional scrambler function is enabled. When the programmed key is pressed again, the OPT indicator disappears and the function is disabled.
2. Assign the optional scrambler function to each channel by using the programming software (KPG-59D). The optional scrambler function can be used without pressing the programmed key.

1-1. Scrambler Code Setting

The code can be configured by two methods.

1. Hold down the programmed OPT key to enter the code setting mode.
   Select a new code by pressing [∧] or [∨] key to change.
   When the programmed key is pressed again, the new code is stored and exit the code setting mode.
2. Set a code for each channel by using the programming software (KPG-59D).

2. Option Board Terminal

Terminals for mounting the option board are provided at the center of the TX-RX unit. The table shows the correspondence between the board and terminals. Disconnect R725 and R778 in TX-RX unit when the voice scrambler board is attached.

Connect the option board to the connection terminals of the TX-RX unit.

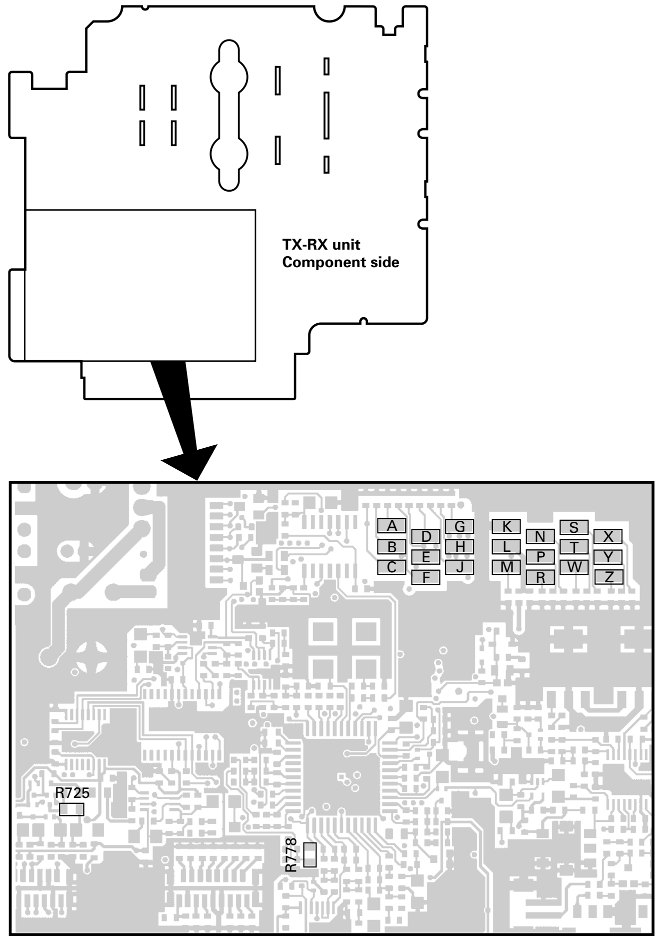


Fig. 1

2-1. Option Port 1 (For ANI board etc.)

Port name			Description	Connection	Note
Abbreviation (PCB)	Abbreviation (Schematic diagram)	Name			
B	RX IN	Data in	Board data input. Transceiver (Receiver demodulaion circuit) → ANI board	Connected to the circuit	Reference 1kHz STD DEV → 250~350mVrms
T	DATA OUT	Data out	Board data output. ANI board → Transceiver (Transmitter modulation circuit)	Connected to the circuit	Reference 1kHz/150mVrms → 2.5~3.5kHz (Wide), 1.25~1.75kHz (Narrow)
Z	TCONT	T control	Audio amplifier power control → TX-RX unit microprocessor	CPU input	L : Audio amp on H : Audio amp off

INSTALLATION

Port name			Description	Connection	Note
Abbreviation (PCB)	Abbreviation (Schematic diagram)	Name			
X	STONE	Side tone	Beep during PTT ID	Connected to the circuit	
R	AUDI IH	Audio inhibit	Microphone muting during PTT ID	Connected to the circuit	
K	GND	Ground	Ground	Ground	
W	AUX	Aux	Emergency channel request → TX-RX unit microprocessor	CPU input	L : EMG CH request H : No EMG CH request
J	PTTO	PTT	Microprocessor PTT logic → ANI board	CPU output	L : TX, H : RX
P	EMERG	Emergency	Microprocessor emergency channel logic → ANI board	CPU output	L : Emergency operation request H : No emergency operation request
N	BUSY	Channel busy	Microprocessor busy logic → ANI board	CPU output	L : Busy, H : Not busy
Y	KEY	(Transmission) Key	Transmission start control GE-star → TX-RX unit microprocessor	CPU input	L : Transmission request H : No transmission request
L	+8V	Board power supply	Switched B	Power supply	

2-2. Option Port 2 (For voice scrambler etc.)

Port name			Description	Connection	Note
Abbreviation (PCB)	Abbreviation (Schematic diagram)	Name			
G	CODE 1	Scrambler code 1	First of four bits of scrambler code	CPU output	Board code selection (Logic by binary code)
D	CODE 2	Scrambler code 2	Second of four bits of scrambler code		
E	CODE 3	Scrambler code 3	Third of four bits of scrambler code		
F	CODE 4	Scrambler code 4	Fourth of four bits of scrambler code		
A	TXOUT	TX out	Board → Transceiver (Transmitter modulation circuit)	Connected to the circuit	Reference 1kHz/15mVrms → 2.5~3.5kHz (Wide), 1.25~1.75kHz (Narrow)
M	RXOUT	RX out	Board → Transceiver (Audio amp)	Connected to the ciircuit	
K	GND	Ground	Ground	Ground	
J	PTTO		Scrambler modulation/demodulation control	CPU output	L : TX, H : RX
H	CLRC	Clear/Code	Specifies whether to scramble	CPU output	L : Scramble, H : Normal
B	RXIN	RX in	Transceiver (Microphone circuit) → Board	Connected to the circuit	Reference 1kHz STD DEV → 250~350mVrms
C	TXIN	TX in	transceiver (Microphone circuit) → Board	Connected to the circuit	
L	+8V	Board power supply	Switched B	Power supply	

INSTALLATION

3. Ignition Sense Cable (KCT-18)

The KCT-18 is an optional cable to use the following functions:

3-1. Ignition function

The ignition function allows you to turn the transceiver's power on and off with the ignition key of your car. When you are driving with the ignition key on, the horn alert function is disabled.

3-2. Timed power off function

The timed power off function turns the transceiver's power off the time specified with the programming software (KPG-59D) after the ignition key is turned off. When you are driving with the ignition key on, the horn alert function is disabled.

The ignition sense function and the timed power off function can be used at the same time.

3-3. Modification

1. Remove the short plug from the accessory connector (15 pins) on the back of the transceiver.
2. Insert the KCT-18 into pin 3 (IGN).

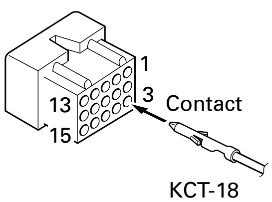


Fig. 2

4. External Speaker (KES-4)

1. The external speaker output from the accessory connector (15 pins) on the back of the transceiver is 10W/4 ohms. Use the KES-4.

4-1. Connection for the KES-4 with the TK-6110

- **When taking the AF output from the accessory connector (15-pin) on the rear of the radio**

The following tools are required for changing the connector.

Extracting tool

the following extracting tool is recommended :
Molex Inc. Order No. : 11-03-0002

1. Remove the connector with jumper from the external speaker connector on the rear panel of the radio (Fig. 3-1).
   Note : Save the jumper, which is required when the radio is used without the external speaker.
2. Remove the terminals with the jumper from the connector housing holes number 9 and 12 using the extracting tool.
   Removing the jumper lead (Fig. 3-2)
   1) Insert the extracting tool (11-03-0002) into the connector while pushing the jumper lead in the direction of (a).
   2) Push the extracting tool into collapse the barbs of the crimp terminal.
   3) Pull out the lead while continuing to push the extracting tool in the direction (b).
3. Reinsert the terminal with the black and white stripe lead into hole number 6, and the terminal with the black lead into hole number 12 (Fig. 3-3).
4. Attach the connector to the external speaker connector on the radio.

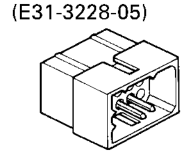


Fig. 3-1

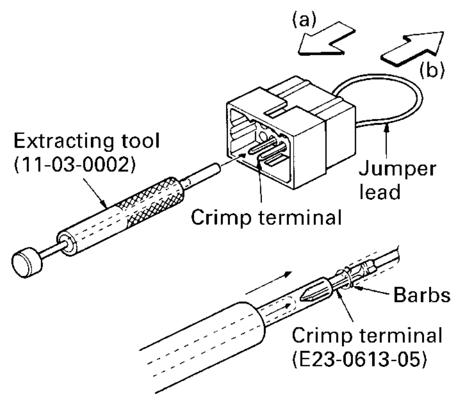


Fig. 3-2

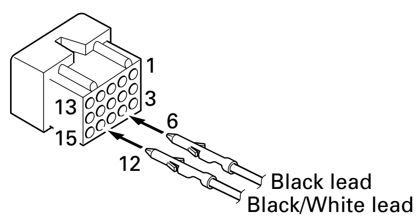


Fig. 3-3

5. Horn Alert Function

The HR pin of the accessory connector (15-pin) on the rear of the transceiver is an open collector and the maximum current is 100mA. The maximum available current can be increased to 1A by installing a relay.

Program the Horn Alert Function, using KPG-59D.

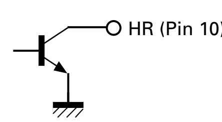


Fig. 4

CIRCUIT DESCRIPTION

1. Overview

The KENWOOD model TK-6110 is a VHF/FM transceiver designed to operate in the frequency range of 29.7 to 37MHz (K), 35.0 to 50.0MHz (K2), the unit consists of a receiver, a transmitter, a phase-locked loop (PLL) frequency synthesizer, power supply circuits, a control unit.

2. Circuit Configuration by Frequency

The receiver is a double-conversion superheterodyne with a first intermediate frequency (IF) of 128.55MHz and a second IF of 455kHz. Incoming a signals from the antenna are mixed with the local signal from the PLL1 to produce the first IF of 128.55MHz.

This is then mixed with the 129.005MHz seconds local oscillator output to produce the 455kHz second IF. This is detected to give the demodulated signal.

The transmit signal is modulated PLL2-VCO2 (129.005 MHz) from the microphone. The transmit signal frequency is down-conversion with PLL2 and PLL1. It is then amplified and sent to the antenna.

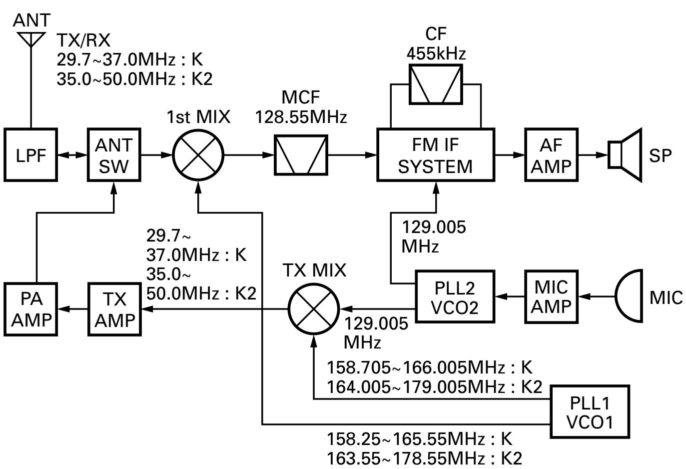


Fig. 1 Frequency configuration

3. Receiver System

3-1. Front-End RF Amplifier

An incoming signal from the antenna is applied to a band-pass filter (L202) after going through a low-pass filter and an antenna switch (K1). The signal is then amplified by the RF amplifier (Q201) and again filtered by another band-pass filter (L203, L206 and L207).

3-2. First Mixer

The signal from the band-pass filter is heterodyned with the first local oscillator signal from the PLL frequency synthesizer circuit at the first mixer (IC201) to become a 128.55MHz first intermediate frequency (IF) signal.

The first IF signal is fed through two monolithic crystal filters (XF201) to further remove spurious signals.

3-3. IF Amplifier

The first IF signal is amplified by Q202 and Q205, and then enters IC202 (FM processing IC). The signal is heterodyned again with a second local oscillator signal (129.005MHz) with in IC202 to become a 455kHz second IF signal. The second IF signal is fed through a 455kHz ceramic filter, CF201 and CF202 to further eliminate unwanted signals before it is amplified and FM detected in IC202.

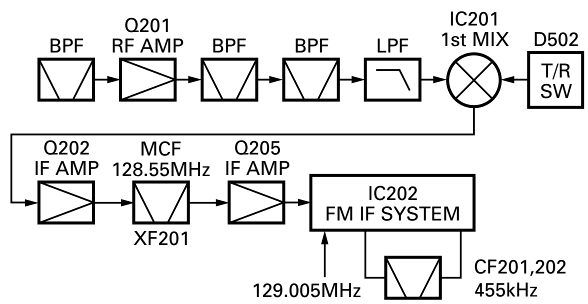


Fig. 2 Receiver section

Item	Rating
Nominal center frequency	128.55MHz
Pass bandwidth	±7.5kHz or more at 3dB
Attenuation bandwidth	±35kHz or less at 40dB
Ripple	1.0dB or less
Insertion loss	5dB or less
Guaranteed attenuation	70dB or more at fo±910kHz
Terminating impedance	1000Ω

Table 1 Crystal filter (L71-0560-05) (TX-RX unit XF201)

CIRCUIT DESCRIPTION

3-4. Audio Amplifier Circuit

The recovered audio signal obtained from IC202 is amplified by IC709, IC713, low-pass filtered by IC713 high-pass filtered by IC713 and band-eliminate filtered by IC713.

The audio signals then passed through a de-emphasized by IC713. The processed audio signal passes through an audio volume control and is amplified to a sufficient level to drive a loudspeaker by an audio power amplifier BTL (IC102).

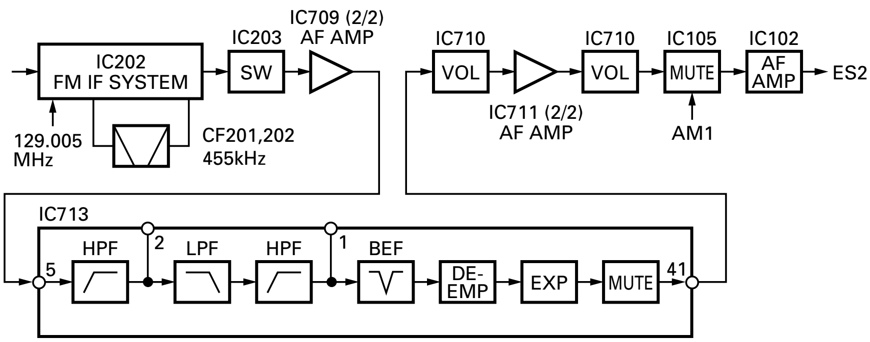


Fig. 3 Audio amplifier circuit

3-5. Squelch Circuit

The output signal from IC202 enters FM IC again, then passed through a band-pass filter. The noise component output from IC202 is amplified by Q206 and rectified by D205 to produce a DC 0 voltage corresponding to the noise level. The DC voltage is sent to the analog port of the CPU (IC604).

And IC202 outputs a DC voltage (RSSI) corresponding to the input of the IF amplifier.

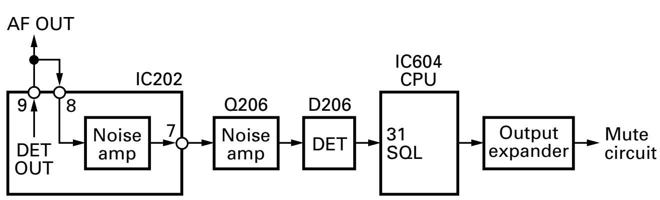


Fig. 4 squelch circuit

4. Transmitter System

4-1. Microphone Amplifier

The signal from the microphone is high-pass filtered by IC713, passed through microphone mute and microphone amplifier circuit (Q703 and IC714), limited and pre-emphasized by IC713 and D711.

4-2. Modulator Circuit

The output of Audio-processor (IC703) is passed to the D/A converter (IC710) for maximum deviation adjustment and the summing amplifier (IC711) before being applied to a varactor diode in the voltage controlled oscillator (VCO) located in the frequency synthesizer section.

4-3. Down-Mixer

At Q503, a modulated VCO2 signal is mixed with 2nd local oscillator signal, 129.005MHz. The difference of the two signals is used for the transmission signal 29.7~37MHz (K), 35.0~50.0MHz (K2). The output was filtered through a low-pass filter.

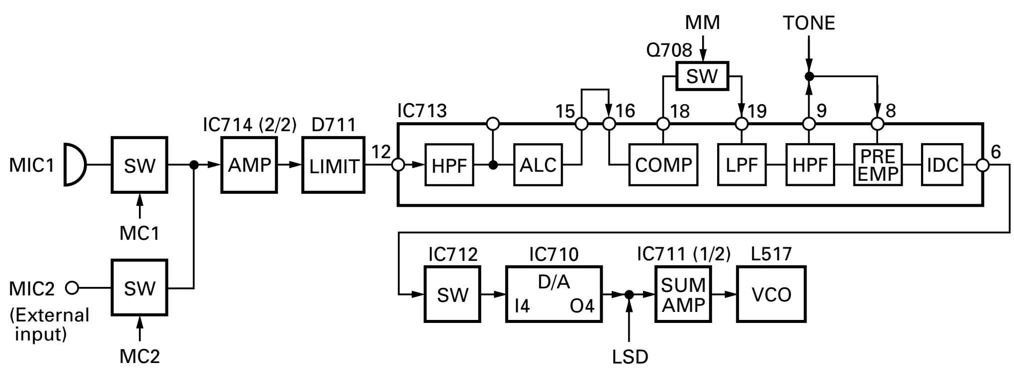


Fig. 5 Microphone circuit

CIRCUIT DESCRIPTION

4-4. Driver and Final Power amplifier Circuits

The transmit signal is generated by the TX mixer (Q503). The transmit signal obtained from the buffer amplifier Q1 and Q2, is amplified by Q3 to approximately 30dBm. This amplified signal is amplified by Q4 and Q5 to approximately 8W, and this signal is passed to the final stage.

The RF power amplifier consists of transistor (Q6 and Q7) and is capable of roducing up to 70W of RF power.

4-5. Transmit/Receive Switching Circuit

The final output signal is passed through a transmit/receive switching circuit (K1) before it is passed to the antenna terminal.

4-6. Automatic Power Control, Circuit and Transmitter

The APC circuit consists of an RF level detector, an exciter control section and a temperature sensing circuit. The RF level detector senses the forward and reflected power. The transmitter output power is kept constant by the exciter control circuit which monitors the forward power and regulates the supply voltage applied to the exciter section.

If the antenna load becomes abnormal, the reflected power increases, causing the exciter control circuit to reduce the supply voltage to the exciter. In case of an abnormal temperature rise in the power amplifier section, the temperature sensing circuit detects this condition and send the information to the APC circuit. These actions reduce the transmitter output power to a safe operating level.

5. PLL Frequency Synthesizer

The frequency synthesizer consists of the VCXO (X501), VCO (L517), PLL IC (IC501) and buffer amplifiers.

The VCXO generates 16.8MHz reference frequency. The frequency stability is within ±5.0ppm (temperature range of –30 to +60°C). The output of the VCXO is applied to pin 8 of the PLL IC.

VCO (L517) has 2 internal VCOs. One for the 1st local oscillator (K : 158.25~166.005MHz, K2 : 163.55~179.005 MHz) and another one for the 2nd local oscillator (129.005MHz). Each output is connected to a dual PLL IC (IC501).

VCO1 oscillates at K : 158.705~166.005MHz, K2 : 164.005~179.005MHz during transmission and it oscillates at K : 158.25~165.55MHz, K2 : 163.55~178.55MHz during reception.

VCO2 oscillates at 129.005MHz during both reception and transmission. However, the oscillated signal is modulated during transmission. Each PLL circuit has LPFs and buffer amplifiers.

The output of VCO1 goes through the buffer amplifier, then the output is switched either for the 1st local oscillator circuit of the receiver or TX mixer.

The output of VCO2 goes through the buffer amplifier, then the output is switched either for the 2nd local oscillator circuit of the receiver or TX mixer.

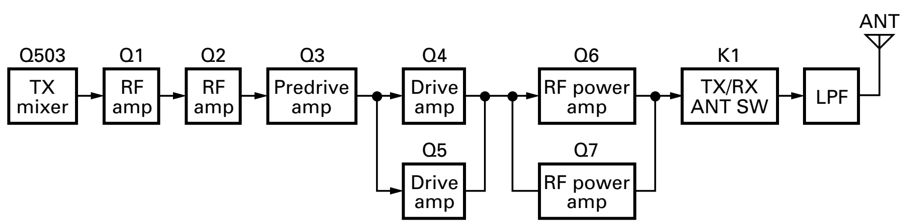


Fig. 6 Drive and final amplifier

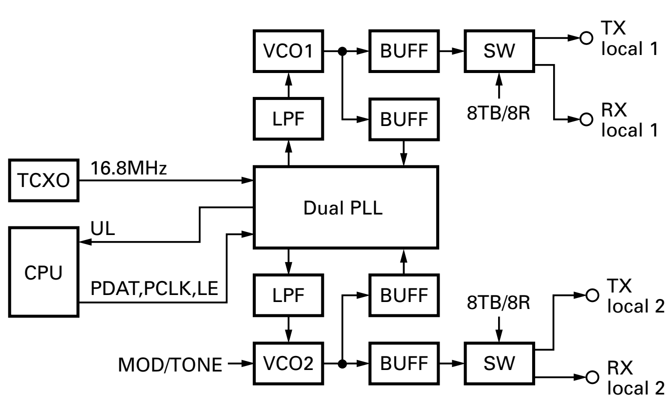


Fig. 7 PLL block diagram

CIRCUIT DESCRIPTION

6. Power Supply Circuit

The power (+B), which is suplied via a power connector, is routed to the TX drive amplifier (Q4 and Q5), the TX final amplifier (Q6 and Q7), and the audio power amplifier (IC102).

The power switch (Q110) converts the power (+B) to SB. The 8V REG (IC103) converts SB to 8C.

The two, 5V REGs (IC104 and IC602) converts 8C to 5C and 5CM respectively. The 5CM is the power supplied to the CPU. 8C is distributed between the TX circuit power (8T and 8TB) and the RX circuit power (8R).

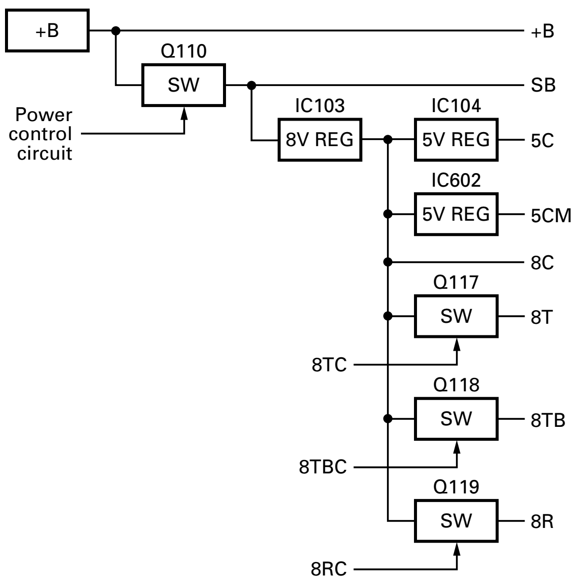


Fig. 8 Power supply circuit

7. Control Circuit

The control unit circuit consists of microprocessor IC604 and flash memory IC607. It controls the TX-RX unit and transfers data to and from the Display unit. The CPU (IC604) mainly performs the following :

1) Switching between transmission and reception by PTT signal input.
2) Reading channel, frequency, and program data from the memory circuit.
3) Sending frequency program data to the PLL.
4) Controlling squelch on/off from the squelch circuit.
5) Controlling the audio mute circuit by decode data input.
6) Transmitting encode data (QT, DQT).
7) Sending serial data to output expander (IC704, IC701, IC702 and IC703) to control various function in the unit.

7-1. Memory Circuit

IC607 has a flash memory with a capacity of 2M bits that contains the transceiver control program for the CPU and data such as transceiver channels and operating features.

This program can be easily written from an external devices. Data, such as DTMF memories and operating status, are programmed into the EEPROM (IC605).

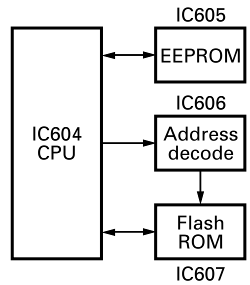


Fig. 9 Memory circuit

7-2. CPU Clock

The CPU clock is generated by VCXO (16.8MHz) and it is fed through an inverter, IC603. This clock was divided into a half cycle (1/2 frequency) at the internal CPU. The CPU further divides this clock to utilize it as the various clocks.

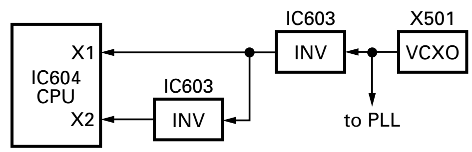


Fig. 10 CPU clock circuit

7-3. Shift Register

IC704, IC701, IC702 and IC703 is an interface IC for output port expansion. It is used to expand the CPU (IC604) output ports.

7-4. D/A Converter

IC715 and IC710 is used as a conventional semi-fixed-resistor converter. It sets the following :

1) RX filter tuning
2) Transmission power tuning
3) Modulation level tuning
4) Audio power tuning

7-5. Key Input (Display unit)

K1 or K2 becomes High when any key is pressed (or enable signal on the optional circuit).

When K1 or K2 becomes High, to trigger the interrupt to IC604 in order to start the key scan.

When the key scan starts, the output terminals IC901 (Q1~Q5) become Low. Only the key sensing circuit remains High. When a key is pressed, the signal is routed through K1 or K2 to the microprocessor. Then, the microprocessor determines which key is pressed using this signals.

CIRCUIT DESCRIPTION

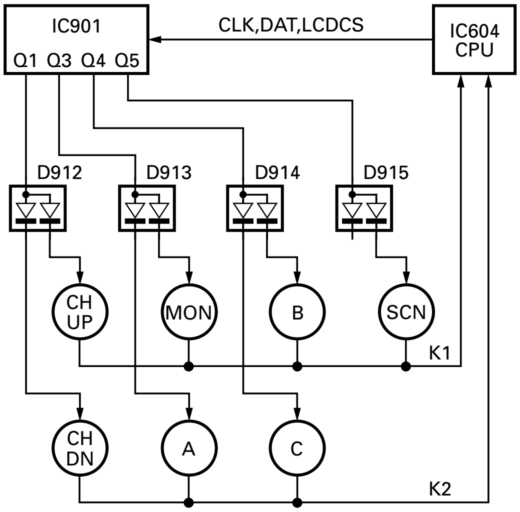


Fig. 11 Key input

8. Signalling Circuit

8-1. Encode

The CPU (IC604) transmits the encode data selected by the program.

- **Low-speed data (QT, DQT)**

Low-speed data is output from pin 34 of the CPU. The signal passes through a low-pass filter consisting of IC706 (2/2), and goes to the summing amplifier (IC711 1/2). The signal is mixed with the audio signal and goes to the VCO (L517).

- **High-speed data (DTMF)**

High-speed data is output from pin 35 of the CPU. The signal passes through a low-pass filter consisting of IC706 (1/2), and provides a TX DTMF tone and a RX DTMF tone including a beep tone. The TX DTMF tone is passed to the D/A convertor (IC710) for DTMF deviation adjustment, and then applied to the audio processor (IC713).

The signal is mixed with the audio signal and goes to the VCO. The RX DTMF tone is passed the D/A convertor (IC710) for audio control summing amplifier (IC711 2/2), audio power amplifier and then to the speaker.

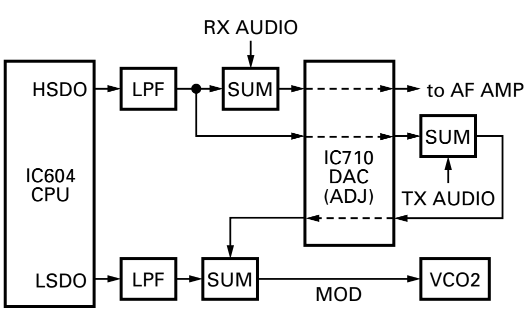


Fig. 12 Encode

8-2. Decode

- **Low-speed data (QT, DQT)**

The demodulated signal from the FM IC (IC202) is amplified by IC709 (2/2) and passes through a low-pass filter (IC705) to remove audio components. The signal is input to pin 28 of the CPU.

The CPU digitizes this signal, performs processing such as DC restoration, and decodes the signal.

- **High-speed data (DTMF)**

The DTMF input signal from the FM IC (IC202) is amplified by IC709 (2/2) and goes to IC708, the DTMF decoder. The decoded information is then processed by the CPU. During transmission and standby, the PD terminal is High. When the line is busy, the PD terminal becomes Low, the power down mode is canceled and decoding is carried out.

- **High-speed data (2-tone)**

The demodulated signal from the FM IC (IC202) is amplified by IC709 (2/2) and passes through an audio processor (IC713) and low-pass filter (IC709 1/2) to remove a low-speed data.

The CPU digitizes this signal, performs processing such as DC restoration, and decodes the signal.

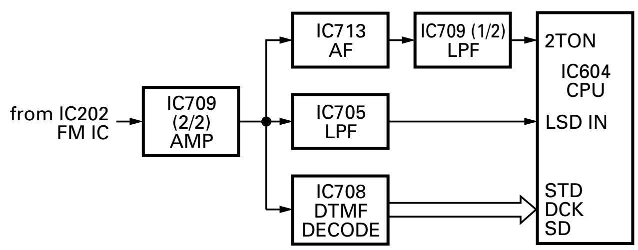


Fig. 13 Decode

SEMICONDUCTOR DATA

Microprocessor : 784214GC0618EU (TX-RX Unit IC604)

- **Terminal function**

Pin No.	Pin name	I/O	Action
1	FCLR	O	Modem FCLR
2	POF	O	Power off
3	LD	O	D/A converter CS (M62364FP)
4	MSKE	O	Modem MSK enable
5	MDAT	O	Modem Data/TX Data
6	MD1	I	Model select 1
7	MD2	I	Model select 2
8	NC		
9	VDD	–	+5V
10	X2	–	Ext. clock
11	X1	–	Ext. clock
12	VSS	–	GND
13	XT2	–	Open
14	XT1	–	GND
15	RESET	–	CPU reset
16	SENSB	I	GE-STAR SENS B
17	TRD	I	Modem TRD
18	RTM	I	Modem RTM
19	STD	I	DTMF decoder STD
20	NC		
21	PSW	I	Power SW detect
22	HK1	I	MIC hook 1 (RXD1)
23	AVDD	–	+5V
24	AVREF0	–	+5V
25	AUXGE	I	GE-STAR AUX
26	VOL	I	AF volume
27	TMP	I	Temperature
28	LSD IN	I	QT/DQT input
29	IGN	I	Ignition sense L : ON, H : OFF
30	UL	I	PLL unlock detect
31	SQL	I	SQL level
32	RSSI	I	RSSI level
33	AVSS	–	GND
34	LSDO	O	QT/DQT output
35	HSDO	O	DTMF/BEEP output
36	AVREF1	–	+5V
37,38	NC		
39	PDAT	O	PLL data
40	RXD1	I	Serial interface RXD
41	PTT1/TXD1	I/O	MIC PTT/ Serial interface TXD
42	MSTB	O	Modem STB
43	DCK	O	DTMF decoder clock
44	SD	I	DTMF SD
45	LCDCS	O	LCD CS
46	STB1	O	Shift register 1 STB
47	STB2	O	Shift register 2 STB
48~71			Cannot use. Flash ROM access port.
72	VSS	–	GND
73~74			Cannot use. Flash ROM access port.
75			Cannot use. Flash ROM (4Mbit) access port.
76			Cannot use open
77~78			Cannot use. Flash ROM access port.
79	KEY	I	GE-STAR KEY
80	NC		Cannot use open
81	VDD	–	+5V
82	SCL	O	EEPROM clock
83	SDA	I/O	EEPROM data
84	CLK	O	Common clock
85	DATA	O	Common data
86	CM	I	DTMF MIC key pad data
87	K1	I	Key scan counter return 1
88	K2	I	Key scan counter return 2
89	PCLK	O	PLL clock
90	KES	O	Key scan counter enable
91	2TON	I	2-Tone
92	SOE	O	Shift register output enable
93	LE	O	PLL latch enable
94	TEST	-	GND
95	TCNT	I	GE-STAR TCONT
96	PTT2	I	EXT PTT
97	HK2	I	EXT hook
98	FSW	I	Foot SW
99	LD2	O	D/A converter CS (M62354GP)
100	RDT	I	Modem RDT

Shift Register Output

- **Shift Register 1 (TX-RX unit IC704)**

Pin No.	Port	Name	Action
4	Q1	8RBC	8RB control SW L : OFF, H : ON
5	Q2	8RC	8R control SW L : OFF, H : ON
6	Q3	8TBC	8TB control SW L : OFF, H : ON
7	Q4	8TC	8R control SW L : OFF, H : ON
14	Q5	–	Reserved
13	Q6	–	Not used
12	Q7	–	Reserved
11	Q8	NBS	NB control SW L : OFF, H : ON

SEMICONDUCTOR DATA

• Shift Register 2 (TX-RX unit IC701)

Pin No.	Port	Name	Action
4	Q1	AM1	Audio mute 1 L : Mute, H : Unmute
5	Q2	REG1	Modem REG1
6	Q3	REG2	Modem REG2
7	Q4	PD	DTMF PD
14	Q5	AUX	ACC AUX
13	Q6	–	Not used
12	Q7	AM2	Audio mute 2 L : Unmute, H : Mute
11	Q8	–	Not used

• Shift Register 3 (TX-RX unit IC702)

Pin No.	Port	Name	Action
4	Q1	BLC	LCD, KEY back light SW L : OFF, H : ON
5	Q2	RXLED	Busy LED SW L : ON, H : OFF
6	Q3	TXLED	TX LED SW L : ON, H : OFF
7	Q4	MM	Modem, GE-STAR L : Mute, H : Unmute
14	Q5	HRC	Horn alert control SW L : OFF, H : ON
13	Q6	MC1	Internal MIC SW L : Mute, H : Unmute
12	Q7	MC2	External MIC SW L : Mute, H : Unmute
11	Q8	–	Not used

• Shift Register 4 (TX-RX unit IC703)

Pin No.	Port	Name	Action
4	Q1	PTTO	GE-STAR, Scrambler PTT
5	Q2	CLRC	Scrambler CLR code L : ON, H : OFF
6	Q3	CHBS	GE-STAR Channel Busy
7	Q4	EMRG	GE-STAR EMRG
14	Q5	COD1	Scrambler code set
13	Q6	COD2	Scrambler code set
12	Q7	COD3	Scrambler code set
11	Q8	COD4	Scrambler code set

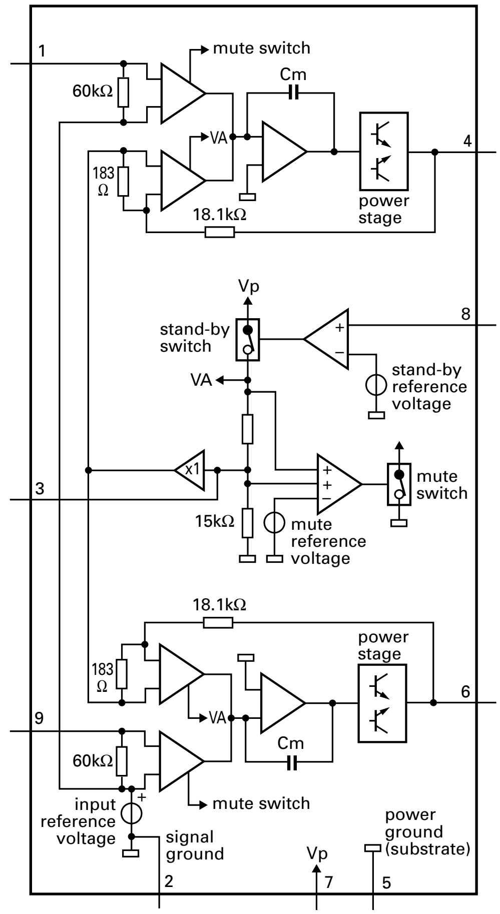
RF Final Amplifier : 2SC2540 (TX-RX Unit Q6,Q7)

• Absolute maximum ratings

Symbol	Parameter	Condition	Rating
V_{CBO}	Collector to base voltage		35V
V_{EBO}	Emitter to base voltage		4V
V_{CEO}	Collector to emitter voltage	$R_{BE}=\infty$	17V
I_C	Collector current		10A
P_C	Collector dissipation		75W
Tj	Junction temperature		+175°C
Tstg	Storage temperature		–55~+175°C

Audio Power Amplifier : TDA1519A (TX-RX Unit IC102)

• Block Diagram



• Terminal function

Pin No.	Symbol	Description
1	NINV	Non-inverting input
2	GND1	Ground (signal)
3	RR	Supply voltage ripple rejection
4	OUT1	Output 1
5	GND2	Ground (substrate)
6	OUT2	Output 2
7	Vp	Positive supply voltage
8	M/SS	Mute/stand-by switch
9	INV	Inverting input

DESCRIPTION OF COMPONENTS

TX-RX Unit (X57-6100-XX) (A/3)

-10 : K -11 : K2

Ref. No.	Use/Function	Operation/Condition
IC2	APC comparator	APC control
IC101	D Flip-Flop	Power supply control
IC102	Audio power amplifier	10W/4Ω, BTL method
IC103	Voltage regulator	Input : SB, Output : 8V
IC104	Voltage regulator	Input : 8V, Output : 5V
IC105	Analog switch	Audio mute switch
IC201	Active DBM	RX 1st mixer
IC202	FM IF system	2nd mixer, Detector, IF amp, Noise amp
IC203	Analog switch	Audio mute switch
IC401	AGC amplifier	
IC501	Dual-PLL	
IC601	Voltage detector	Microprocessor reset
IC602	Voltage regulator	Input : 8V, Output : 5V
IC603	Buffer amplifier	Microprocessor clock
IC604	Microprocessor	
IC605	EEPROM	
IC606	NOR gate	Address decode latch
IC607	Flash ROM	
IC701~704	Shift register	Output expander
IC705	Active low pass filter	LPF for LSD input
IC706	Active low pass filter	LPF for HSD, LSD output
IC707	Buffer amplifier	1/2V Ref, Ext. DET amplifier
IC708	DTMF decoder	
IC709	Buffer amplifier/ Active filter	DET amplifier/LPF for 2-tone
IC710	D/A converter	Audio adjustment
IC711	Summing/Buffer amplifier	For MOD/For AF
IC712	Analog switch	Audio switch
IC713	Audio processor	
IC714	AF/ Buffer amplifier	For MOD/For DI
IC715	D/A converter	
Q1~3	TX pre-drive amplifier	
Q4,5	TX drive amplifier	
Q6,7	TX final amplifier	
Q8	DC switch	
Q9	DC amplifier	APC controller
Q10	DC switch	TX/RX switch

Ref. No.	Use/Function	Operation/Condition
Q11	DC switch	APC control
Q12	DC amplifier	APC controller
Q13	DC switch	APC control
Q101	DC switch	On when push the power switch
Q102	DC switch	On when power off
Q103	DC switch	On when power on
Q104	DC switch	On when power off
Q105	Mute switch	On when power on and AM2 “L”
Q106	DC switch	On when 18V or more
Q107	DC switch	On when power on and AM2 “L”
Q108	DC switch	On when power on
Q109	DC switch	On when AM2 “H”
Q110	Power switch	On when power on
Q111	DC switch	On when ignition sense “H”
Q112	DC switch	On when ignition sense “H”
Q113	8T switch	On when 8TC “H”
Q114	8TB switch	On when 8TBC “H”
Q115	8R switch	On when 8RC “H”
Q117	Current driver, 8T switch	On when 8TC “H”
Q118	Current driver, 8TB switch	On when 8TBC “H”
Q119	Current driver, 8R switch	On when 8RC “H”
Q121	DC switch	
Q122	Mute switch	AM1 “L” : Mute, “H” : Unmute
Q201	RF front amplifier	RX frequency
Q202	If amplifier	128.55 MHz
Q203,204	NB gate	
Q205	If amplifier	128.55 MHz
Q206	SQL amplifier	Noise amplifier
Q401	RF amplifier	
Q402,403	Detector	
Q404~406	Amplifier	
Q407,408	DC switch	
Q501	Ripple filter	
Q503	TX mixer	
Q504	RF amplifier	Sub VCO
Q505	RF amplifier	Main VCO
Q506	RF buffer amplifier	Main VCO
Q507	RF buffer amplifier	Sub VCO
Q601	DC switch	On when push the power switch
Q602	DC switch	On when ignition sense “H”

DESCRIPTION OF COMPONENTS

Ref. No.	Use/Function	Operation/Condition
Q701	DC switch	On when AUX
Q702	DC switch	On when horn alert
Q703	Internal MIC switch	MC1 "L" : Mute, "H" : Unmute
Q704	DC switch	MC1 "L" : Mute, "H" : Unmute
Q705	External MIC switch	MC2 "L" : Mute, "H" : Unmute
Q706	DC switch	MC2 "L" : Mute, "H" : Unmute
Q707	DC switch	
Q708	MIC mute switch	MM "L" : Mute, "H" : Unmute
Q709	DC switch	
D1	Reflected wave rectification	
D3	Forward wave rectification	
D4	Surge absorption	
D5	Protector	
D101	Protection of reverse connection	
D102	Surge absorption	
D103	Voltage reference	Voltage protection
D104	DC switch	
D105	Voltage reference	Voltage protection
D106	DC switch	
D107	Surge absorption	
D108	DC switch	
D109	Voltage reference	Protection of high voltage
D202~205	B.P.F. tuning	Vari-cap tuning
D206	Noise detector	
D207	DC switch	On when TX
D208	Voltage reference	Voltage protection
D401	DC switch	
D501~504	RF switch	TX/RX
D701~710	Surge absorption	
D711	Voltage clamp	

Display Unit (X57-6100-XX) (B/3)

-10 : K -11 : K2

Ref. No.	Use/Function	Operation/Condition
IC901	Shift register	Output expander
IC902	LCD driver	
Q901	Current driver, TX LED switch	TXLED "L" : On, "H" : Off
Q902	Current driver, RX LED switch	RXLED "L" : On, "H" : Off
Q903	LCD back light switch	BLC "L" : Off, "H" : On
Q904	LCD back light switch	BLC "L" : Off, "H" : On
Q905	KEY back light switch	BLC "L" : Off, "H" : On
D901	LED for TX, RX LED light	
D902~907	LED for LCD back light	
D908~911	LED for KEY back light	
D912~915	Protection of reverse current	
D916	Speed up	

PARTS LIST

∗New Parts. ⚠ indicates safety critical components.
Parts without **Parts No.** are not supplied.
Les articles non mentionnes dans le **Parts No.** ne sont pas fournis.
Teile ohne **Parts No.** werden nicht geliefert.

L : Scandinavia | **K** : USA | **P** : Canada
Y : PX (Far East, Hawaii) | **T** : England | **E** : Europe
Y : AAFES (Europe) | **X** : Australia | **M**: Other Areas

TK-6110
TX-RX UNIT (X57-6100-XX)

Ref. No.	Address	New parts	Parts No.	Description	Desti-nation
TK-6110					
1	1B	*	A01-2170-03	CABINET	
2	3A	*	A62-0761-13	PANEL ASSY	
4	3B		B11-1148-14	ILLUMINATION GUIDE (LCD)	
5	3B		B11-1149-04	FILTER (LCD)	
6	3B		B38-0800-05	LCD	
7	7B	*	B41-1837-04	CAUTION LABEL	
8	2B		B42-2455-04	STICKER (M4X8 MAX)	
9	2B		B42-5650-04	S/NO. LABEL	
11	1C	*	B62-1216-10	INSTRUCTION MANUAL ACSY	
12	2B	*	B72-1633-04	MODEL NAME PLATE	K
12	2B	*	B72-1729-04	MODEL NAME PLATE	K2
14	3B	*	E29-1192-04	INTER CONNECTOR (LCD)	
15	2B		E30-2145-15	ANTENNA CABLE	
16	1D		E30-3339-05	DC CORD ACSY	
17	1D		E31-3228-05	LEAD WIRE WITH CONNECTOR ACSY	
18	3A	*	E37-0831-05	FLAT CABLE (MIC&VOL UNIT:13P)	
19	2A	*	E37-0833-15	LEAD WIRE WITH CONNECTOR (SP)	
20	2B	*	E37-0838-05	LEAD WIRE WITH CONNECTOR (15P)	
21	3A	*	E37-0899-05	FLAT CABLE (DISPLAY UNIT:17P)	
23	2A	*	F10-2326-13	SHIELDING PLATE (FINAL)	
24	1A	*	F10-2370-04	SHIELDING PLATE	
25	1A	*	F10-2380-04	SHIELDING PLATE (LPF)	
26	2A	*	F10-2386-04	SHIELDING PLATE (NB)	
27	1D		F51-0018-05	FUSE (6*30 20A) ACSY	
29	1A		G02-0715-04	FLAT SPRING (VOLTAGE REGULATOR:IC103)	
30	1A	*	G02-0861-04	FLAT SPRING (AUDIO POWER AMP:IC102)	
31	2A	*	G10-1242-04	FIBROUS SHEET (CHASSIS UPPER)	
32	3B	*	G10-1245-04	FIBROUS SHEET (CHASSIS SP)	
33	2A,2B	*	G10-1253-04	FIBROUS SHEET (CHASSIS SIDE)	
34	1B	*	G10-1270-04	FIBROUS SHEET (CASE)	
35	3B	*	G10-1271-04	FIBROUS SHEET (CHASSIS LOWER)	
36	2B	*	G11-2613-04	RUBBER SHEET	
37	2B		G13-1468-04	CUSHION (CHASSIS REAR)	
38	2B	*	G13-1752-04	CUSHION (SP)	
39	2B	*	G13-1788-04	CUSHION (CHASSIS SP UPPER)	
40	3B	*	G13-1799-04	CUSHION (CHASSIS SP LOWER)	
41	3B	*	G53-0893-03	PACKING (SP)	
42	1B	*	G53-1509-03	PACKING (CASE)	
44	2D	*	H02-0616-03	INNER PACKING CASE	
45	2C	*	H12-3083-12	PACKING FIXTURE (FRONT)	
46	2C	*	H12-3084-12	PACKING FIXTURE (REAR)	
47	2C		H25-0723-04	PROTECTION BAG (230X400:MAIN BODY)	
48	3C	*	H52-1504-02	ITEM CARTON CASE	
50	1D		J19-1584-05	HOLDER ACSY	
51	2B	*	J21-8387-04	HARDWARE FIXTURE (15P CONNECTOR)	
52	2B	*	J21-8388-04	HARDWARE FIXTURE (SP)	
53	3B	*	J21-8413-04	HARDWARE FIXTURE (LCD)	
54	1D	*	J29-0662-03	BRACKET ACSY	
55	1B	*	J42-0515-05	BUSHING (15P CONNECTOR)	
56	1A	*	J42-0702-05	BUSHING (W1)	
57	2B	*	J99-0356-04	ADHESIVE TAPE (SP)	
59	3A	*	K29-5388-02	KEY TOP	
60	3A	*	K29-5389-03	KNOB (VOL)	
A	1B		N33-2606-45	OVAL HEAD MACHINE SCREW (CASE)	
B	1A		N67-3008-46	PAN HEAD SEMS SCREW W (FINAL AMP)	
C	2B		N87-2606-45	BRAZIER HEAD TAPTITE SCREW (ANT,15P)	
D	1A,1B,2B		N87-2606-46	BRAZIER HEAD TAPTITE SCREW (PCB)	
62	2D		N99-0395-05	SCREW SET ACSY	
64	3B		T07-0265-05	SPEAKER	
65	1D		T91-0621-05	MICROPHONE ACSY	
TX-RX UNIT (X57-6100-XX) -10 : K -11 : K2					
D901			B30-2151-05	LED (RED/GREEN)	
D902-907			B30-2140-05	LED (Y/8)	
D908-911			B30-2050-05	LED	
C1			CK73GB1H103K	CHIP C 0.010UF K	
C3			CC73GCH1H270J	CHIP C 27PF J	K2
C3			CC73GCH1H470J	CHIP C 47PF J	K
C4			CK73GB1H103K	CHIP C 0.010UF K	
C5			CC73GCH1H101J	CHIP C 100PF J	K2
C6			CK73GB1H103K	CHIP C 0.010UF K	
C7			CK73GB1H102K	CHIP C 1000PF K	
C8			CK73GB1H103K	CHIP C 0.010UF K	
C9			CC73GCH1H101J	CHIP C 100PF J	K
C9			CC73GCH1H680J	CHIP C 68PF J	K2
C11			CC73GCH1H101J	CHIP C 100PF J	K
C11			CK73GB1H103K	CHIP C 0.010UF K	K2
C13			CK73GB1H472K	CHIP C 4700PF K	
C14			CK73GB1H103K	CHIP C 0.010UF K	
C15,16			CK73GB1H472K	CHIP C 4700PF K	
C17-19			CK73GB1H103K	CHIP C 0.010UF K	
C20			CC73GCH1H470J	CHIP C 47PF J	K2
C20			CC73GCH1H560J	CHIP C 56PF J	K
C21,22			CC73GCH1H101J	CHIP C 100PF J	K2
C21,22			CC73GCH1H121J	CHIP C 120PF J	K
C23			CC73GCH1H470J	CHIP C 47PF J	K2
C23			CC73GCH1H560J	CHIP C 56PF J	K
C24			CC73GCH1H390J	CHIP C 39PF J	K2
C24			CC73GCH1H680J	CHIP C 68PF J	K
C25			CK73GB1H103K	CHIP C 0.010UF K	
C28,29			CK73GB1H103K	CHIP C 0.010UF K	
C30		*	C93-0596-05	CHIP C 270PF K	K2
C30			C93-0600-05	CHIP C 560PF K	K
C31			CE04EW1E470M	ELECTRO 47UF 25WV	
C32			CK73GB1H103K	CHIP C 0.010UF K	
C33			CK73GB1H472K	CHIP C 4700PF K	
C34			CK73GB1H103K	CHIP C 0.010UF K	
C35			C92-0633-05	CHIP-TAN 22UF 10WV	
C36			CK73GB1H103K	CHIP C 0.010UF K	
C39,40		*	C93-0684-05	CERAMIC 6800PF K	
C45		*	C90-4085-05	ELECTRO 47UF 20WV	
C46			CK73FB1E104K	CHIP C 0.10UF K	
C47			CK73GB1H472K	CHIP C 4700PF K	
C48			CC73GCH1H101J	CHIP C 100PF J	

PARTS LIST

TX-RX UNIT (X57-6100-XX)

Ref. No.	Address	New parts	Parts No.	Description			Desti- nation
C49			CK73FB1E104K	CHIP C	0.10UF	K	
C50			CK73GB1H103K	CHIP C	0.010UF	K	
C51			CK73FB1E103K	CHIP C	0.010UF	K	
C52			CK73GB1H103K	CHIP C	0.010UF	K	
C54			CC73GCH1H020B	CHIP C	2.0PF	B	
C55			CC73GCH1H820J	CHIP C	82PF	J	
C56			CK73GB1H103K	CHIP C	0.010UF	K	
C58			CK73FB1E104K	CHIP C	0.10UF	K	
C59-61			CK73GB1H103K	CHIP C	0.010UF	K	
C62			CC73GCH1H680J	CHIP C	68PF	J	
C63			CK73GB1H103K	CHIP C	0.010UF	K	
C64			CC73GCH1H020B	CHIP C	2.0PF	B	
C65,66			CC73GCH1H220J	CHIP C	22PF	J	K2
C65,66			CC73GCH1H390J	CHIP C	39PF	J	K
C68,69			CK73GB1C473K	CHIP C	0.047UF	K	
C70			CM73F2H470J	CHIP C	47PF	J	K2
C70			CM73F2H820J	CHIP C	82PF	J	K
C71			CM73F2H080D	CHIP C	8.0PF	D	K
C71			CM73F2H090D	CHIP C	9.0PF	D	K2
C72			CM73F2H101J	CHIP C	100PF	J	K2
C72			CM73F2H181J	CHIP C	180PF	J	K
C73			CK73GB1H103K	CHIP C	0.010UF	K	
C75			CM73F2H180J	CHIP C	18PF	J	K
C75			CM73F2H220J	CHIP C	22PF	J	K2
C76			CM73F2H470J	CHIP C	47PF	J	K2
C76,77			CM73F2H820J	CHIP C	82PF	J	K
C77			CM73F2H390J	CHIP C	39PF	J	K2
C78			CM73F2H510J	CHIP C	51PF	J	
C79			CM73F2H390J	CHIP C	39PF	J	K2
C79			CM73F2H820J	CHIP C	82PF	J	K
C80			CK73GB1H103K	CHIP C	0.010UF	K	
C81			CC73GCH1H470J	CHIP C	47PF	J	K2
C81			CC73GCH1H560J	CHIP C	56PF	J	K
C82			CC73GCH1H101J	CHIP C	100PF	J	K2
C82			CC73GCH1H121J	CHIP C	120PF	J	K
C83			CC73GCH1H470J	CHIP C	47PF	J	K2
C83			CC73GCH1H560J	CHIP C	56PF	J	K
C84,85			CC73GCH1H220J	CHIP C	22PF	J	K2
C84,85			CC73GCH1H390J	CHIP C	39PF	J	K
C86			CC73GCH1H270J	CHIP C	27PF	J	K2
C86			CC73GCH1H560J	CHIP C	56PF	J	K
C87,88			CC73GCH1H220J	CHIP C	22PF	J	K2
C87,88			CC73GCH1H390J	CHIP C	39PF	J	K
C89			CC73GCH1H470J	CHIP C	47PF	J	K2
C89			CC73GCH1H560J	CHIP C	56PF	J	K
C90			CC73GCH1H101J	CHIP C	100PF	J	K2
C90			CC73GCH1H121J	CHIP C	120PF	J	K
C91			CC73GCH1H470J	CHIP C	47PF	J	K2
C91			CC73GCH1H560J	CHIP C	56PF	J	K
C92-96			CK73GB1H103K	CHIP C	0.010UF	K	
C99			C93-0601-05	CHIP C	680PF	K	
C100			CM73F2H561J	CHIP C	560PF	J	
C101			CE04EW1E471M	ELECTRO	470UF	25WV	
C102			CK73GB1H472K	CHIP C	4700PF	K	
C103			C92-0777-05	ELECTRO	1000UF	25WV	
C104			CE04NW1E4R7M	ELECTRO	4.7UF	25WV	
C105,106			CK73FB1E104K	CHIP C	0.10UF	K	
C107			CK73FB1E224K	CHIP C	0.22UF	K	
C108			CE04EW1E470M	ELECTRO	47UF	25WV	
C109,110			CK73FB1E104K	CHIP C	0.10UF	K	

Ref. No.	Address	New parts	Parts No.	Description			Desti- nation
C111			CE04EW1E101M	ELECTRO	100UF	25WV	
C112			CE04EW1E470M	ELECTRO	47UF	25WV	
C113			C92-0560-05	CHIP-TAN	10UF	6.3WV	
C114,115			CK73FB1E224K	CHIP C	0.22UF	K	
C116,117			CK73GB1H102K	CHIP C	1000PF	K	
C118,119			CK73FB1E104K	CHIP C	0.10UF	K	
C120			CE04EW1E470M	ELECTRO	47UF	25WV	
C121			CK73FF1C105Z	CHIP C	1.0UF	Z	
C122			CK73GB1H471K	CHIP C	470PF	K	
C123-126			CK73GB1H103K	CHIP C	0.010UF	K	
C128			CK73FF1C105Z	CHIP C	1.0UF	Z	
C129			CK73GB1H471K	CHIP C	470PF	K	
C130			C92-0589-05	CHIP-TAN	47UF	6.3WV	
C131			CK73GB1H102K	CHIP C	1000PF	K	
C132,133			CK73GB1H103K	CHIP C	0.010UF	K	
C134			CK73FB1E104K	CHIP C	0.10UF	K	
C135,136			C92-0560-05	CHIP-TAN	10UF	6.3WV	
C137,138			CK73FB1E224K	CHIP C	0.22UF	K	
C139			CK73GB1C104K	CHIP C	0.10UF	K	
C140			CK73FB1E224K	CHIP C	0.22UF	K	
C141			CK73GB1C104K	CHIP C	0.10UF	K	
C142			CK73GB1H471K	CHIP C	470PF	K	
C197,198			CM73F2H121J	CHIP C	120PF	J	K
C196,199			CM73F2H181J	CHIP C	180PF	J	K2
C196,199			CM73F2H330J	CHIP C	33PF	J	K
C197,198			CM73F2H331J	CHIP C	330PF	J	K2
C203			CC73GCH1H101J	CHIP C	100PF	J	
C204			CC73GCH1H050C	CHIP C	5.0PF	C	K2
C205			CC73GCH1H390J	CHIP C	39PF	J	K
C205			CC73GCH1H470J	CHIP C	47PF	J	K2
C206			CK73GB1H103K	CHIP C	0.010UF	K	
C208			CK73GB1H102K	CHIP C	1000PF	K	
C209			C92-0628-05	CHIP-TAN	10UF	10WV	
C210-212			CK73GB1H103K	CHIP C	0.010UF	K	
C213			CC73GCH1H050C	CHIP C	5.0PF	C	K2
C214			CK73GB1H103K	CHIP C	0.010UF	K	
C215			CC73GCH1H390J	CHIP C	39PF	J	K
C215			CC73GCH1H470J	CHIP C	47PF	J	K2
C217-219			CK73GB1H103K	CHIP C	0.010UF	K	
C221			CC73GCH1H050C	CHIP C	5.0PF	C	K2
C222			CC73GCH1H101J	CHIP C	100PF	J	
C225			CC73GCH1H270J	CHIP C	27PF	J	
C226			CK73GB1H102K	CHIP C	1000PF	K	
C227			CC73GCH1H100D	CHIP C	10PF	D	
C228			CC73GCH1H180J	CHIP C	18PF	J	
C229			CC73GCH1H040C	CHIP C	4.0PF	C	
C230			CC73GCH1H680J	CHIP C	68PF	J	
C231,232			CK73GB1H103K	CHIP C	0.010UF	K	
C233			CK73GB1H471K	CHIP C	470PF	K	
C235			CK73GB1H471K	CHIP C	470PF	K	
C236-238			CK73GB1H102K	CHIP C	1000PF	K	
C239			CC73GCH1H030C	CHIP C	3.0PF	C	
C240			CC73GCH1H180J	CHIP C	18PF	J	
C241			CK73GB1H102K	CHIP C	1000PF	K	
C242			CK73GB1C473K	CHIP C	0.047UF	K	
C243			CK73GB1H102K	CHIP C	1000PF	K	
C245			CC73GCH1H1R5B	CHIP C	1.5PF	B	
C246			CK73GB1H102K	CHIP C	1000PF	K	
C247,248			CK73GB1H103K	CHIP C	0.010UF	K	
C249			CC73GCH1H010B	CHIP C	1.0PF	B	

PARTS LIST

TX-RX UNIT (X57-6100-XX)

Ref. No.	Address	New parts	Parts No.	Description	Desti- nation
C250			CC73GCH1H020B	CHIP C 2.0PF B	
C251			CC73GCH1H010B	CHIP C 1.0PF B	
C252			CK73GB1H102K	CHIP C 1000PF K	
C253			CK73GB1H103K	CHIP C 0.010UF K	
C255			CK73GB1H102K	CHIP C 1000PF K	
C256			CK73GB1C104K	CHIP C 0.10UF K	
C257-259			CK73GB1H102K	CHIP C 1000PF K	
C260			CC73GCH1H030C	CHIP C 3.0PF C	
C262			CK73GB1C104K	CHIP C 0.10UF K	
C263			CK73GB1H102K	CHIP C 1000PF K	
C264			C92-0004-05	CHIP-TAN 1.0UF 16WV	
C266			CC73GCH1H270J	CHIP C 27PF J	
C267,268			CK73GB1C104K	CHIP C 0.10UF K	
C269			CK73GB1H102K	CHIP C 1000PF K	
C270			CC73GCH1H221J	CHIP C 220PF J	
C271			CK73GB1H103K	CHIP C 0.010UF K	
C272			CC73GCH1H221J	CHIP C 220PF J	
C273			CK73GB1E223K	CHIP C 0.022UF K	
C274			CK73GB1H472K	CHIP C 4700PF K	
C275,276			CK73GB1H102K	CHIP C 1000PF K	
C277			CK73FB1H223K	CHIP C 0.022UF K	
C278			C92-0560-05	CHIP-TAN 10UF 6.3WV	
C279			CK73FB1C334K	CHIP C 0.33UF K	
C280			CK73GB1H103K	CHIP C 0.010UF K	
C281			C92-0560-05	CHIP-TAN 10UF 6.3WV	
C282			CK73GB1H103K	CHIP C 0.010UF K	
C284			CC73GCH1H390J	CHIP C 39PF J	K
C284			CC73GCH1H470J	CHIP C 47PF J	K2
C285,286			CC73GCH1H150J	CHIP C 15PF J	
C287			CC73GCH1H020B	CHIP C 2.0PF B	
C288			CC73GCH1H150J	CHIP C 15PF J	
C290			CC73GCH1H020B	CHIP C 2.0PF B	
C291			CC73GCH1H101J	CHIP C 100PF J	
C293			CC73GCH1H020B	CHIP C 2.0PF B	
C294			CC73GCH1H150J	CHIP C 15PF J	
C296			CC73GCH1H020B	CHIP C 2.0PF B	
C297			CC73GCH1H180J	CHIP C 18PF J	
C299			CC73GCH1H020B	CHIP C 2.0PF B	
C300			CC73GCH1H270J	CHIP C 27PF J	
C301			CC73GCH1H040C	CHIP C 4.0PF C	
C302			CC73GCH1H020B	CHIP C 2.0PF B	
C303			CC73GCH1H220J	CHIP C 22PF J	
C304			CC73GCH1H040C	CHIP C 4.0PF C	
C305			CC73GCH1H020B	CHIP C 2.0PF B	
C306			CC73GCH1H330J	CHIP C 33PF J	
C307,308			CK73GB1H102K	CHIP C 1000PF K	
C309			CC73GCH1H010B	CHIP C 1.0PF B	
C401			C92-0543-05	CHIP-TAN 3.3UF 10WV	
C402			CC73GCH1H680J	CHIP C 68PF J	
C403			CK73GB1H103K	CHIP C 0.010UF K	
C404			CK73GB1C104K	CHIP C 0.10UF K	
C405			C92-0543-05	CHIP-TAN 3.3UF 10WV	
C406			CK73GB1H103K	CHIP C 0.010UF K	
C407			CC73GCH1H220J	CHIP C 22PF J	
C408			CC73GCH1H470J	CHIP C 47PF J	
C409,410			CK73GB1H103K	CHIP C 0.010UF K	
C411			CK73GB1H102K	CHIP C 1000PF K	
C412,413			CK73GB1C104K	CHIP C 0.10UF K	
C414			CK73GB1H103K	CHIP C 0.010UF K	
C415			CC73GCH1H220J	CHIP C 22PF J	

Ref. No.	Address	New parts	Parts No.	Description	Desti- nation
C416			CK73GB1H102K	CHIP C 1000PF K	
C417			CC73GCH1H221J	CHIP C 220PF J	
C418			CC73GCH1H680J	CHIP C 68PF J	
C419-421			CK73GB1H103K	CHIP C 0.010UF K	
C422			CC73GCH1H221J	CHIP C 220PF J	
C423			C92-0543-05	CHIP-TAN 3.3UF 10WV	
C424			CK73GB1H102K	CHIP C 1000PF K	
C425			CK73GB1H103K	CHIP C 0.010UF K	
C501			C92-0560-05	CHIP-TAN 10UF 6.3WV	
C502			CC73GCH1H100D	CHIP C 10PF D	
C503			CK73GB1H103K	CHIP C 0.010UF K	
C504,505			CK73GB1H102K	CHIP C 1000PF K	
C507			C92-0560-05	CHIP-TAN 10UF 6.3WV	
C510			C92-0589-05	CHIP-TAN 47UF 6.3WV	
C511,512			CK73GB1H103K	CHIP C 0.010UF K	
C513			CC73GCH1H100D	CHIP C 10PF D	
C514			CK73GB1H102K	CHIP C 1000PF K	
C516			CC73GCH1H100D	CHIP C 10PF D	
C517,518			CK73GB1H102K	CHIP C 1000PF K	
C519			CK73GB1H103K	CHIP C 0.010UF K	
C521			CK73GB1H103K	CHIP C 0.010UF K	
C522			C92-0507-05	CHIP-TAN 4.7UF 6.3WV	
C523,524			CK73GB1H102K	CHIP C 1000PF K	
C525			CK73GB1H222K	CHIP C 2200PF K	
C526			CC73GCH1H101J	CHIP C 100PF J	
C527			C92-0507-05	CHIP-TAN 4.7UF 6.3WV	
C528			CC73GCH1H120J	CHIP C 12PF J	
C529			CC73GCH1H470J	CHIP C 47PF J	
C530			CK73GB1H102K	CHIP C 1000PF K	
C531-533			CC73GCH1H101J	CHIP C 100PF J	
C534,535			CK73GB1H102K	CHIP C 1000PF K	
C536			CC73GCH1H101J	CHIP C 100PF J	
C537			CK73GB1H102K	CHIP C 1000PF K	
C538			CC73GCH1H180J	CHIP C 18PF J	
C539			CK73GB1H103K	CHIP C 0.010UF K	
C540			CK73GB1H102K	CHIP C 1000PF K	
C541			CC73GCH1H101J	CHIP C 100PF J	
C542			C92-0001-05	CHIP C 0.1UF 35WV	
C543			C92-0560-05	CHIP-TAN 10UF 6.3WV	
C544			C92-0004-05	CHIP-TAN 1.0UF 16WV	
C545,546			C92-0589-05	CHIP-TAN 47UF 6.3WV	
C547			CK73GB1C473K	CHIP C 0.047UF K	
C548			CK73GB1H102K	CHIP C 1000PF K	K2
C548,549			CK73GB1H102K	CHIP C 1000PF K	K
C549			CC73GCH1H101J	CHIP C 100PF J	K2
C550			CC73GCH1H070D	CHIP C 7.0PF D	K2
C550			CC73GCH1H100D	CHIP C 10PF D	K
C551			C92-0004-05	CHIP-TAN 1.0UF 16WV	
C552			CK73GB1H103K	CHIP C 0.010UF K	
C553			C92-0560-05	CHIP-TAN 10UF 6.3WV	
C554			CK73GB1H102K	CHIP C 1000PF K	
C555			CC73GCH1H060D	CHIP C 6.0PF D	
C557			CK73GB1H102K	CHIP C 1000PF K	
C559			CC73GCH1H220J	CHIP C 22PF J	
C560,561			CK73GB1H102K	CHIP C 1000PF K	
C564			CC73GCH1H180J	CHIP C 18PF J	
C565			CC73GCH1H470J	CHIP C 47PF J	
C568			CK73GB1H102K	CHIP C 1000PF K	
C569			CC73GCH1H390J	CHIP C 39PF J	
C570			CC73GCH1H220J	CHIP C 22PF J	

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Ref. No.	Address	New parts	Parts No.	Description	Desti-nation
C571			CK73GB1H102K	CHIP C 1000PF K	
C573			CC73GCH1H090D	CHIP C 9.0PF D	
C574			CC73GCH1H180J	CHIP C 18PF J	
C575,576			CK73GB1H102K	CHIP C 1000PF K	
C577			CC73GCH1H270J	CHIP C 27PF J	
C578			CC73GCH1H150J	CHIP C 15PF J	
C579			CC73GCH1H070D	CHIP C 7.0PF D	
C580			CC73GCH1H060D	CHIP C 6.0PF D	K
C581			CC73GCH1H040C	CHIP C 4.0PF C	
C582			CK73GB1H102K	CHIP C 1000PF K	
C583			CC73GCH1H270J	CHIP C 27PF J	
C584			CC73GCH1H150J	CHIP C 15PF J	
C585			CK73GB1H102K	CHIP C 1000PF K	
C586			CC73GCH1H100D	CHIP C 10PF D	
C587			CC73GCH1H090D	CHIP C 9.0PF D	
C588-594			CK73GB1H102K	CHIP C 1000PF K	
C595			CC73GCH1H220J	CHIP C 22PF J	
C596			CK73GB1H103K	CHIP C 0.010UF K	
C598			CK73GB1H103K	CHIP C 0.010UF K	
C599			CC73GCH1H470J	CHIP C 47PF J	
C601			CK73GB1H102K	CHIP C 1000PF K	
C602			CK73FF1C105Z	CHIP C 1.0UF Z	
C603			CK73GB1H471K	CHIP C 470PF K	
C604			CK73GB1H103K	CHIP C 0.010UF K	
C605			CK73GB1H222K	CHIP C 2200PF K	
C606			CK73FF1C105Z	CHIP C 1.0UF Z	
C607			CK73GB1H222K	CHIP C 2200PF K	
C608			CK73GB1H471K	CHIP C 470PF K	
C609			C92-0589-05	CHIP-TAN 47UF 6.3WV	
C610			CK73GB1H102K	CHIP C 1000PF K	
C611-639			CC73HCH1H101J	CHIP C 100PF J	
C640			CK73GB1H102K	CHIP C 1000PF K	
C641			C92-0560-05	CHIP-TAN 10UF 6.3WV	
C642			CK73GB1H102K	CHIP C 1000PF K	
C643			CK73GB1C104K	CHIP C 0.10UF K	
C703			CK73GB1C104K	CHIP C 0.10UF K	
C704			C92-0560-05	CHIP-TAN 10UF 6.3WV	
C707			CC73GCH1H151J	CHIP C 150PF J	
C711			CK73GB1C104K	CHIP C 0.10UF K	
C715			CK73GB1C104K	CHIP C 0.10UF K	
C716			CK73GB1H471K	CHIP C 470PF K	
C720			CK73GB1H103K	CHIP C 0.010UF K	
C723			CK73GB1H103K	CHIP C 0.010UF K	
C725,726			CC73GCH1H101J	CHIP C 100PF J	
C728			CK73GB1H471K	CHIP C 470PF K	
C730,731			CC73GCH1H101J	CHIP C 100PF J	
C733			CK73GB1C104K	CHIP C 0.10UF K	
C734,735			CC73GCH1H101J	CHIP C 100PF J	
C737			CK73GB1C104K	CHIP C 0.10UF K	
C738,739			CC73GCH1H101J	CHIP C 100PF J	
C741,742			CC73GCH1H101J	CHIP C 100PF J	
C744,745			CC73GCH1H101J	CHIP C 100PF J	
C747,748			CC73GCH1H101J	CHIP C 100PF J	
C750,751			CC73GCH1H101J	CHIP C 100PF J	
C753,754			CC73GCH1H101J	CHIP C 100PF J	
C756			CC73GCH1H101J	CHIP C 100PF J	
C757			CK73GB1H102K	CHIP C 1000PF K	
C759			CC73GCH1H101J	CHIP C 100PF J	
C760			C92-0560-05	CHIP-TAN 10UF 6.3WV	
C764-767			CK73GB1H102K	CHIP C 1000PF K	
C768			CK73GB1C333K	CHIP C 0.033UF K	
C770			CC73GCH1H121J	CHIP C 120PF J	
C771			CK73GB1H103K	CHIP C 0.010UF K	
C772			CK73GB1C273K	CHIP C 0.027UF K	
C773			CK73GB1H103K	CHIP C 0.010UF K	
C774			CK73GB1H222K	CHIP C 2200PF K	
C775			CC73GCH1H271J	CHIP C 270PF J	
C776			CK73GB1H103K	CHIP C 0.010UF K	
C777			CK73GB1H472K	CHIP C 4700PF K	
C778			CK73GB1E123K	CHIP C 0.012UF K	
C779			CK73GB1C683K	CHIP C 0.068UF K	
C780			CK73GB1H103K	CHIP C 0.010UF K	
C781			CC73GCH1H101J	CHIP C 100PF J	
C782			C92-0003-05	CHIP-TAN 0.47UF 25WV	
C783			CK73GB1H103K	CHIP C 0.010UF K	
C784			CK73GB1C473K	CHIP C 0.047UF K	
C785			CK73GB1C104K	CHIP C 0.10UF K	
C786-788			CK73GB1H103K	CHIP C 0.010UF K	
C789			C92-0507-05	CHIP-TAN 4.7UF 6.3WV	
C791			CK73GB1C104K	CHIP C 0.10UF K	
C792,793			CK73GB1H103K	CHIP C 0.010UF K	
C794			C92-0560-05	CHIP-TAN 10UF 6.3WV	
C795			CK73GB1C104K	CHIP C 0.10UF K	
C796			CC73GCH1H471J	CHIP C 470PF J	
C797			CK73GB1H103K	CHIP C 0.010UF K	
C798			CK73GB1H102K	CHIP C 1000PF K	
C800			CK73GB1H103K	CHIP C 0.010UF K	
C801			CK73GB1H122J	CHIP C 1200PF J	
C802			CK73GB1C104K	CHIP C 0.10UF K	
C803-805			CK73GB1H103K	CHIP C 0.010UF K	
C806,807			CK73GB1C104K	CHIP C 0.10UF K	
C808			CK73GB1H103K	CHIP C 0.010UF K	
C809			CK73GB1C104K	CHIP C 0.10UF K	
C810-812			CK73GB1H562J	CHIP C 5600PF J	
C813			CK73GB1H272J	CHIP C 2700PF J	
C814			CC73GCH1H470J	CHIP C 47PF J	
C815			CK73GB1C333K	CHIP C 0.033UF K	
C816,817			CK73GB1H272J	CHIP C 2700PF J	
C818			CC73GCH1H090D	CHIP C 9.0PF D	
C819			C92-0560-05	CHIP-TAN 10UF 6.3WV	
C820			CC73GCH1H151J	CHIP C 150PF J	
C821			CC73GCH1H090D	CHIP C 9.0PF D	
C822			CK73GB1H122J	CHIP C 1200PF J	
C823			CK73GB1H102K	CHIP C 1000PF K	
C824			C92-0560-05	CHIP-TAN 10UF 6.3WV	
C825			CK73GB1C104K	CHIP C 0.10UF K	
C826			CC73GCH1H101J	CHIP C 100PF J	
C827-830			CK73GB1C104K	CHIP C 0.10UF K	
C831			CK73GB1H103K	CHIP C 0.010UF K	
C832			C92-0560-05	CHIP-TAN 10UF 6.3WV	
C833			CK73GB1H472K	CHIP C 4700PF K	
C834			CK73GB1H103K	CHIP C 0.010UF K	
C836			CK73GB1H472K	CHIP C 4700PF K	
C837			C92-0507-05	CHIP-TAN 4.7UF 6.3WV	
C838			CK73GB1E153K	CHIP C 0.015UF K	
C839			CC73GCH1H101J	CHIP C 100PF J	
C840			CK73FB1H563K	CHIP C 0.056UF K	
C841			C92-0507-05	CHIP-TAN 4.7UF 6.3WV	
C843			CK73GB1H102K	CHIP C 1000PF K	
C844			CK73GB1H272K	CHIP C 2700PF K	

PARTS LIST

TX-RX UNIT (X57-6100-XX)

Ref. No.	Address	New parts	Parts No.	Description	Desti-nation
C845			CK73GB1C104K	CHIP C 0.10UF K	
C902,903			CK73GB1H102K	CHIP C 1000PF K	
C906			CK73GB1H102K	CHIP C 1000PF K	
C907			C92-0004-05	CHIP-TAN 1.0UF 16WV	
C908			CC73GCH1H101J	CHIP C 100PF J	
TC202			C05-0384-05	CERAMIC TRIMMER CAP (10PF)	
TC204			C05-0384-05	CERAMIC TRIMMER CAP (10PF)	
CN1		*	E40-6053-05	FLAT CABLE CONNECTOR (17P)	
CN2			E40-5737-05	PIN ASSY (8P)	
CN3		*	E40-6050-05	FLAT CABLE CONNECTOR (13P)	
CN4			E40-3242-05	PIN ASSY (7P)	
CN5			E40-3246-05	PIN ASSY (2P)	
CN201-204			E40-5538-05	PIN ASSY (2P)	
CN902		*	E40-6050-05	FLAT CABLE CONNECTOR (13P)	
CN904		*	E40-6053-05	FLAT CABLE CONNECTOR (17P)	
J901	3A		E08-0877-05	MODULAR JACK	
W1		*	E37-0900-05	PROCESSED LEAD WIRE	
W2	2B		E30-3340-05	DC CORD	
F1			F53-0130-05	FUSE (3.0A)	
F701			F53-0108-05	FUSE (1.8A)	
CF201			L72-0916-05	CERAMIC FILTER (455KHZ)	
CF202			L72-0924-05	CERAMIC FILTER (455KHZ)	
L1			L40-4705-34	SMALL FIXED INDUCTOR (47UH)	
L2			L40-2285-34	SMALL FIXED INDUCTOR (220NH)	K2
L2			L40-3385-34	SMALL FIXED INDUCTOR (330NH)	K
L3,4			L92-0148-05	FERRITE CHIP	
L5			L40-1095-48	SMALL FIXED INDUCTOR (1UH)	K
L5			L40-2285-48	SMALL FIXED INDUCTOR (220NH)	K2
L6-8			L40-1585-34	SMALL FIXED INDUCTOR (150NH)	
L9			L39-1439-05	TOROIDAL COIL	
L10			L33-0666-05	CHOKE COIL	
L11		*	L39-1433-15	TOROIDAL COIL	
L12			L33-0625-15	TOROIDAL COIL	
L13		*	L39-1432-05	TOROIDAL COIL	
L14			L40-2205-34	SMALL FIXED INDUCTOR (22UH)	
L15			L39-1420-15	TOROIDAL COIL	
L16			L40-2205-34	SMALL FIXED INDUCTOR (22UH)	
L18			L34-1150-05	AIR-CORE COIL	K
L18,19			L34-1151-05	AIR-CORE COIL	K2
L19			L34-1241-05	AIR-CORE COIL	K
L20			L34-1256-05	AIR-CORE COIL	K2
L20			L34-1259-05	AIR-CORE COIL	K
L21			L40-4785-34	SMALL FIXED INDUCTOR (470NH)	
L22,23			L40-1585-92	SMALL FIXED INDUCTOR (150NH)	
L24,25			L40-1585-34	SMALL FIXED INDUCTOR (150NH)	
L26			L40-6875-92	SMALL FIXED INDUCTOR (68NH)	K2
L202,203		*	L34-4639-05	COIL	K2
L202,203		*	L34-4646-05	COIL	K
L204			L40-4775-92	SMALL FIXED INDUCTOR (47NH)	
L205			L40-1005-34	SMALL FIXED INDUCTOR (10UH)	
L206,207		*	L34-4639-05	COIL	K2
L206,207		*	L34-4646-05	COIL	K
L208			L40-6875-92	SMALL FIXED INDUCTOR (68NH)	
L209,210			L40-8275-92	SMALL FIXED INDUCTOR (82NH)	
L211			L40-1285-92	SMALL FIXED INDUCTOR (120NH)	
L212			L40-2785-92	SMALL FIXED INDUCTOR (270NH)	
L213,214			L39-1272-05	TOROIDAL COIL	
L215			L92-0138-05	FERRITE CHIP	

Ref. No.	Address	New parts	Parts No.	Description	Desti-nation
L216			L39-1272-05	TOROIDAL COIL	
L217			L40-1885-92	SMALL FIXED INDUCTOR (180NH)	
L218			L40-1295-34	SMALL FIXED INDUCTOR (1.2UH)	
L219			L34-4616-05	AIR-CORE COIL	
L220			L40-1295-34	SMALL FIXED INDUCTOR (1.2UH)	
L221			L40-2205-34	SMALL FIXED INDUCTOR (22UH)	
L222		*	L34-4648-05	COIL	
L223			L34-4625-05	COIL	
L224		*	L34-4648-05	COIL	
L225			L34-4625-05	COIL	
L226,227			L40-1885-92	SMALL FIXED INDUCTOR (180NH)	
L228			L40-1585-92	SMALL FIXED INDUCTOR (150NH)	
L229-236			L34-4520-05	AIR-CORE COIL	
L237			L34-4530-05	COIL	
L401			L40-1005-34	SMALL FIXED INDUCTOR (10UH)	
L402			L40-5695-34	SMALL FIXED INDUCTOR (5.6UH)	
L403			L40-1015-34	SMALL FIXED INDUCTOR (100UH)	
L404			L40-5695-34	SMALL FIXED INDUCTOR (5.6UH)	
L501,502			L92-0138-05	FERRITE CHIP	
L503			L40-4795-34	SMALL FIXED INDUCTOR (4.7UH)	
L504-510			L92-0138-05	FERRITE CHIP	
L511			L40-1285-92	SMALL FIXED INDUCTOR (120NH)	
L512			L40-2785-34	SMALL FIXED INDUCTOR (270NH)	
L513			L92-0138-05	FERRITE CHIP	
L514			L40-5675-92	SMALL FIXED INDUCTOR (56NH)	
L515			L92-0138-05	FERRITE CHIP	
L516			L40-2285-92	SMALL FIXED INDUCTOR (220NH)	
L517			L78-0481-05	VCO	
L518			L40-2285-92	SMALL FIXED INDUCTOR (220NH)	
L519-522			L92-0138-05	FERRITE CHIP	
L523			L40-5675-92	SMALL FIXED INDUCTOR (56NH)	
L524			L40-4775-92	SMALL FIXED INDUCTOR (47NH)	
L525			L40-5675-92	SMALL FIXED INDUCTOR (56NH)	
L526			L40-4775-92	SMALL FIXED INDUCTOR (47NH)	
L527			L40-1285-92	SMALL FIXED INDUCTOR (120NH)	
L528			L40-4775-92	SMALL FIXED INDUCTOR (47NH)	
L529			L40-3975-92	SMALL FIXED INDUCTOR (39NH)	
L530			L40-8275-92	SMALL FIXED INDUCTOR (82NH)	
L531,532			L40-1085-92	SMALL FIXED INDUCTOR (100NH)	
L533			L40-1285-92	SMALL FIXED INDUCTOR (120NH)	
L534			L40-3375-92	SMALL FIXED INDUCTOR (33NH)	
L535			L40-8275-92	SMALL FIXED INDUCTOR (82NH)	
L536			L40-3375-92	SMALL FIXED INDUCTOR (33NH)	
L537			L40-1085-92	SMALL FIXED INDUCTOR (100NH)	
L538			L40-1585-92	SMALL FIXED INDUCTOR (150NH)	
L602			L92-0138-05	FERRITE CHIP	
L604			L40-1005-34	SMALL FIXED INDUCTOR (10UH)	
L701-703			L92-0138-05	FERRITE CHIP	
L704-706			L92-0140-05	FERRITE CHIP	
L901			L92-0138-05	FERRITE CHIP	
X501			L77-1832-05	VCXO (16.8MHZ)	
X701			L77-1708-05	CRYSTAL RESONATOR (3.579545MHZ)	
XF201		*	L71-0560-05	MCF (128.55MHZ)	
CP601-609			R90-0741-05	MULTIPLE RESISTOR 1K X2	
CP610-624			R90-0740-05	MULTIPLE RESISTOR 100 X2	
CP625			R90-0743-05	MULTIPLE RESISTOR 47K X2	
CP626,627			R90-0741-05	MULTIPLE RESISTOR 1K X2	
R1			RK73GB1J333J	CHIP R 33K J 1/16W	K2
R1			RK73GB1J473J	CHIP R 47K J 1/16W	K

PARTS LIST

TX-RX UNIT (X57-6100-XX)

Ref. No.	Address	New parts	Parts No.	Description	Desti-nation
R2			RK73GB1J471J	CHIP R 470 J 1/16W	
R3			RK73GB1J100J	CHIP R 10 J 1/16W	
R4			RK73GB1J122J	CHIP R 1.2K J 1/16W	
R5			RK73GB1J220J	CHIP R 22 J 1/16W	
R6			RK73GB1J181J	CHIP R 180 J 1/16W	
R8			RK73GB1J100J	CHIP R 10 J 1/16W	K2
R8			R92-1252-05	CHIP R 0 OHM	K
R10			RK73GB1J560J	CHIP R 56 J 1/16W	
R11			RK73GB1J123J	CHIP R 12K J 1/16W	K2
R11			RK73GB1J183J	CHIP R 18K J 1/16W	K
R12			RK73GB1J683J	CHIP R 68K J 1/16W	
R13			RK73GB1J223J	CHIP R 22K J 1/16W	
R14			RK73GB1J472J	CHIP R 4.7K J 1/16W	
R15-18			RK73FB2A101J	CHIP R 100 J 1/10W	
R19-22			R92-1264-05	CHIP R 5.6 J 1W	
R23,24			RS14DB3F101J	FL-PROOF RS 100 J 3W	
R25			RK73GB1J104J	CHIP R 100K J 1/16W	
R26			RK73GB1J123J	CHIP R 12K J 1/16W	
R27			RK73GB1J105J	CHIP R 1.0M J 1/16W	
R28			RK73GB1J330J	CHIP R 33 J 1/16W	
R29			RK73GB1J103J	CHIP R 10K J 1/16W	
R30,31			RK73GB1J270J	CHIP R 27 J 1/16W	
R32			RK73GB1J220J	CHIP R 22 J 1/16W	
R33			RK73GB1J183J	CHIP R 18K J 1/16W	
R35			RK73GB1J223J	CHIP R 22K J 1/16W	
R36			RK73GB1J473J	CHIP R 47K J 1/16W	
R37			R92-1252-05	CHIP R 0 OHM	
R38			RK73GB1J471J	CHIP R 470 J 1/16W	
R39			RK73GB1J102J	CHIP R 1.0K J 1/16W	
R42			R92-1252-05	CHIP R 0 OHM	
R44,45			R92-1252-05	CHIP R 0 OHM	
R46			RK73GB1J153J	CHIP R 15K J 1/16W	
R47			R92-1252-05	CHIP R 0 OHM	
R48			RK73GB1J103J	CHIP R 10K J 1/16W	
R49			RK73GB1J472J	CHIP R 4.7K J 1/16W	
R50			RK73GB1J104J	CHIP R 100K J 1/16W	
R52			R92-1252-05	CHIP R 0 OHM	
R53			RK73GB1J681J	CHIP R 680 J 1/16W	
R54			RK73GB1J391J	CHIP R 390 J 1/16W	
R55			RK73GB1J104J	CHIP R 100K J 1/16W	
R56-59			RK73GB1J562J	CHIP R 5.6K J 1/16W	
R60			RK73GB1J153J	CHIP R 15K J 1/16W	
R61			RK73GB1J103J	CHIP R 10K J 1/16W	
R62			RK73GB1J473J	CHIP R 47K J 1/16W	
R63			RK73GB1J152J	CHIP R 1.5K J 1/16W	
R101			RS14DB3D2R2J	FL-PROOF RS 2.2 J 2W	
R102			RK73GB1J102J	CHIP R 1.0K J 1/16W	
R103			RK73GB1J104J	CHIP R 100K J 1/16W	
R104			RK73GB1J473J	CHIP R 47K J 1/16W	
R105			RK73GB1J104J	CHIP R 100K J 1/16W	
R106			RK73GB1J102J	CHIP R 1.0K J 1/16W	
R107			RK73GB1J473J	CHIP R 47K J 1/16W	
R108			RK73GB1J333J	CHIP R 33K J 1/16W	
R109			RK73GB1J103J	CHIP R 10K J 1/16W	
R110			R92-0670-05	CHIP R 0 OHM	
R111			RK73GB1J103J	CHIP R 10K J 1/16W	
R112			RK73GB1J471J	CHIP R 470 J 1/16W	
R113			RK73GB1J104J	CHIP R 100K J 1/16W	
R114			RK73GB1J333J	CHIP R 33K J 1/16W	
R115-117			RK73GB1J473J	CHIP R 47K J 1/16W	

Ref. No.	Address	New parts	Parts No.	Description	Desti-nation
R118			RK73GB1J472J	CHIP R 4.7K J 1/16W	
R119-121			RK73GB1J473J	CHIP R 47K J 1/16W	
R123			RK73GB1J152J	CHIP R 1.5K J 1/16W	
R124,125			RK73GB1J472J	CHIP R 4.7K J 1/16W	
R127			RK73GB1J102J	CHIP R 1.0K J 1/16W	
R128			RK73GB1J104J	CHIP R 100K J 1/16W	
R129-132			RK73GB1J103J	CHIP R 10K J 1/16W	
R133			RK73GB1J100J	CHIP R 10 J 1/16W	
R134			RK73GB1J473J	CHIP R 47K J 1/16W	
R135			RK73GB1J103J	CHIP R 10K J 1/16W	
R136			RK73GB1J394J	CHIP R 390K J 1/16W	
R137			RK73GB1J104J	CHIP R 100K J 1/16W	
R138,139			RK73GB1J394J	CHIP R 390K J 1/16W	
R140,141			RK73GB1J104J	CHIP R 100K J 1/16W	
R142			RK73GB1J473J	CHIP R 47K J 1/16W	
R143,144			RK73GB1J103J	CHIP R 10K J 1/16W	
R145			RK73GB1J102J	CHIP R 1.0K J 1/16W	
R201			RK73GB1J473J	CHIP R 47K J 1/16W	
R202,203			RK73GB1J103J	CHIP R 10K J 1/16W	
R204			RK73GB1J393J	CHIP R 39K J 1/16W	
R205			RK73GB1J102J	CHIP R 1.0K J 1/16W	
R206-208			RK73GB1J103J	CHIP R 10K J 1/16W	
R211			RK73GB1J560J	CHIP R 56 J 1/16W	
R212			RK73GB1J330J	CHIP R 33 J 1/16W	
R215			R92-1252-05	CHIP R 0 OHM	
R216			RK73GB1J103J	CHIP R 10K J 1/16W	
R218			R92-1252-05	CHIP R 0 OHM	
R221			R92-1252-05	CHIP R 0 OHM	
R223			R92-1252-05	CHIP R 0 OHM	
R225			R92-1252-05	CHIP R 0 OHM	
R226			RK73GB1J151J	CHIP R 150 J 1/16W	
R227			RK73GB1J222J	CHIP R 2.2K J 1/16W	
R228			RK73GB1J101J	CHIP R 100 J 1/16W	
R229			R92-1252-05	CHIP R 0 OHM	
R230			RK73GB1J680J	CHIP R 68 J 1/16W	
R231			RK73GB1J102J	CHIP R 1.0K J 1/16W	
R232			RK73GB1J104J	CHIP R 100K J 1/16W	
R233			R92-1252-05	CHIP R 0 OHM	
R234			RK73GB1J103J	CHIP R 10K J 1/16W	
R235			RK73GB1J822J	CHIP R 8.2K J 1/16W	
R236			RK73GB1J102J	CHIP R 1.0K J 1/16W	
R237,238			RK73GB1J222J	CHIP R 2.2K J 1/16W	
R239,240			RK73GB1J103J	CHIP R 10K J 1/16W	
R241			RK73GB1J222J	CHIP R 2.2K J 1/16W	
R242			RK73GB1J100J	CHIP R 10 J 1/16W	
R243,244			R92-1252-05	CHIP R 0 OHM	
R245			RK73GB1J100J	CHIP R 10 J 1/16W	
R246			RK73GB1J102J	CHIP R 1.0K J 1/16W	
R249			R92-1252-05	CHIP R 0 OHM	
R251			RK73GB1J223J	CHIP R 22K J 1/16W	
R252			RK73GB1J274J	CHIP R 270K J 1/16W	
R253			RK73GB1J334J	CHIP R 330K J 1/16W	
R254			R92-1252-05	CHIP R 0 OHM	
R255			RK73GB1J182J	CHIP R 1.8K J 1/16W	
R256			RK73GB1J332J	CHIP R 3.3K J 1/16W	
R257			RK73GB1J153J	CHIP R 15K J 1/16W	
R258,259			RK73GB1J102J	CHIP R 1.0K J 1/16W	
R260			RK73GB1J223J	CHIP R 22K J 1/16W	
R261			RK73GB1J474J	CHIP R 470K J 1/16W	
R262			RK73GB1J104J	CHIP R 100K J 1/16W	

PARTS LIST

TX-RX UNIT (X57-6100-XX)

Ref. No.	Address	New parts	Parts No.	Description	Desti- nation
R263			RK73GB1J823J	CHIP R 82K J 1/16W	
R264			RK73GB1J104J	CHIP R 100K J 1/16W	
R265			R92-1252-05	CHIP R 0 OHM	
R266			RK73GB1J271J	CHIP R 270 J 1/16W	
R267			RK73GB1J180J	CHIP R 18 J 1/16W	
R268			RK73GB1J271J	CHIP R 270 J 1/16W	
R269			RK73GB1J563J	CHIP R 56K J 1/16W	
R270			R92-1252-05	CHIP R 0 OHM	
R401			R92-1252-05	CHIP R 0 OHM	
R402			RK73GB1J104J	CHIP R 100K J 1/16W	
R403			RK73GB1J333J	CHIP R 33K J 1/16W	
R404			RK73GB1J104J	CHIP R 100K J 1/16W	
R405			RK73GB1J823J	CHIP R 82K J 1/16W	
R406			RK73GB1J103J	CHIP R 10K J 1/16W	
R407			RK73GB1J102J	CHIP R 1.0K J 1/16W	
R408			RK73GB1J101J	CHIP R 100 J 1/16W	
R409			RK73GB1J471J	CHIP R 470 J 1/16W	
R410			RK73GB1J330J	CHIP R 33 J 1/16W	
R411			RK73GB1J563J	CHIP R 56K J 1/16W	
R412			RK73GB1J684J	CHIP R 680K J 1/16W	
R413			RK73GB1J104J	CHIP R 100K J 1/16W	
R414			RK73GB1J102J	CHIP R 1.0K J 1/16W	
R415			RK73GB1J223J	CHIP R 22K J 1/16W	
R416			RK73GB1J562J	CHIP R 5.6K J 1/16W	
R417			RK73GB1J103J	CHIP R 10K J 1/16W	
R418			RK73GB1J562J	CHIP R 5.6K J 1/16W	
R419			RK73GB1J273J	CHIP R 27K J 1/16W	
R420			RK73GB1J102J	CHIP R 1.0K J 1/16W	
R421			RK73GB1J334J	CHIP R 330K J 1/16W	
R422			RK73GB1J104J	CHIP R 100K J 1/16W	
R423			RK73GB1J684J	CHIP R 680K J 1/16W	
R424			RK73GB1J222J	CHIP R 2.2K J 1/16W	
R425			RK73GB1J103J	CHIP R 10K J 1/16W	
R426			RK73GB1J223J	CHIP R 22K J 1/16W	
R427			RK73GB1J101J	CHIP R 100 J 1/16W	
R428			RK73GB1J102J	CHIP R 1.0K J 1/16W	
R429			RK73GB1J103J	CHIP R 10K J 1/16W	
R430			RK73GB1J101J	CHIP R 100 J 1/16W	
R431			RK73GB1J473J	CHIP R 47K J 1/16W	
R432,433			RK73GB1J102J	CHIP R 1.0K J 1/16W	
R434			RK73GB1J151J	CHIP R 150 J 1/16W	
R503			RK73GB1J473J	CHIP R 47K J 1/16W	
R504			RK73GB1J220J	CHIP R 22 J 1/16W	
R505			R92-1252-05	CHIP R 0 OHM	
R506			RK73GB1J392J	CHIP R 3.9K J 1/16W	
R507			R92-1252-05	CHIP R 0 OHM	
R511			RK73GB1J560J	CHIP R 56 J 1/16W	
R512			RK73GB1J103J	CHIP R 10K J 1/16W	
R513,514			RK73GB1J100J	CHIP R 10 J 1/16W	
R515			RK73GB1J102J	CHIP R 1.0K J 1/16W	
R516,517			RK73GB1J100J	CHIP R 10 J 1/16W	
R518			RK73GB1J102J	CHIP R 1.0K J 1/16W	
R519			RK73GB1J103J	CHIP R 10K J 1/16W	
R520			RK73GB1J471J	CHIP R 470 J 1/16W	
R521			R92-1252-05	CHIP R 0 OHM	K2
R521,522			R92-1252-05	CHIP R 0 OHM	K
R522			RK73GB1J100J	CHIP R 10 J 1/16W	K2
R523			RK73GB1J101J	CHIP R 100 J 1/16W	K2
R523			RK73GB1J331J	CHIP R 330 J 1/16W	K
R524			RK73GB1J100J	CHIP R 10 J 1/16W	K
R524			R92-1252-05	CHIP R 0 OHM	K2
R525			RK73GB1J102J	CHIP R 1.0K J 1/16W	
R526			RK73GB1J182J	CHIP R 1.8K J 1/16W	
R527			R92-1252-05	CHIP R 0 OHM	
R528			RK73GB1J154J	CHIP R 150K J 1/16W	
R529			RK73GB1J104J	CHIP R 100K J 1/16W	K
R529			RK73GB1J124J	CHIP R 120K J 1/16W	K2
R530,531			RK73GB1J102J	CHIP R 1.0K J 1/16W	
R532			RK73GB1J104J	CHIP R 100K J 1/16W	
R533,534			RK73GB1J223J	CHIP R 22K J 1/16W	
R535			RK73GB1J222J	CHIP R 2.2K J 1/16W	
R536			RK73GB1J223J	CHIP R 22K J 1/16W	
R537			RK73GB1J102J	CHIP R 1.0K J 1/16W	
R538			RK73GB1J222J	CHIP R 2.2K J 1/16W	
R539			RK73GB1J560J	CHIP R 56 J 1/16W	
R541			RK73GB1J331J	CHIP R 330 J 1/16W	K
R541			RK73GB1J391J	CHIP R 390 J 1/16W	K2
R542-545			RK73GB1J222J	CHIP R 2.2K J 1/16W	
R546			R92-1252-05	CHIP R 0 OHM	
R547			RK73GB1J101J	CHIP R 100 J 1/16W	
R548			RK73GB1J561J	CHIP R 560 J 1/16W	
R549			RK73GB1J102J	CHIP R 1.0K J 1/16W	
R550			RK73GB1J224J	CHIP R 220K J 1/16W	
R552			RK73GB1J331J	CHIP R 330 J 1/16W	
R553			RK73GB1J223J	CHIP R 22K J 1/16W	
R555			RK73GB1J470J	CHIP R 47 J 1/16W	
R556,557			RK73GB1J100J	CHIP R 10 J 1/16W	
R558			RK73GB1J473J	CHIP R 47K J 1/16W	
R559			RK73GB1J334J	CHIP R 330K J 1/16W	
R560			RK73GB1J470J	CHIP R 47 J 1/16W	
R561			R92-1252-05	CHIP R 0 OHM	
R562,563			RK73GB1J470J	CHIP R 47 J 1/16W	
R564			RK73GB1J101J	CHIP R 100 J 1/16W	
R565,566			RK73GB1J102J	CHIP R 1.0K J 1/16W	
R567			R92-1252-05	CHIP R 0 OHM	
R570			R92-1252-05	CHIP R 0 OHM	
R572			RK73GB1J101J	CHIP R 100 J 1/16W	K
R572			R92-1252-05	CHIP R 0 OHM	K2
R601			RK73GB1J103J	CHIP R 10K J 1/16W	
R602			RK73GB1J474J	CHIP R 470K J 1/16W	
R603			RK73GB1J473J	CHIP R 47K J 1/16W	
R604			RK73GB1J103J	CHIP R 10K J 1/16W	
R605			RK73GB1J473J	CHIP R 47K J 1/16W	
R606			RK73GB1J102J	CHIP R 1.0K J 1/16W	
R607			RK73GB1J100J	CHIP R 10 J 1/16W	
R608			RK73GB1J473J	CHIP R 47K J 1/16W	
R609			RK73GB1J103J	CHIP R 10K J 1/16W	
R610			RK73GB1J100J	CHIP R 10 J 1/16W	
R611-617			RK73GB1J473J	CHIP R 47K J 1/16W	
R618			RK73GB1J472J	CHIP R 4.7K J 1/16W	
R619			RK73GB1J473J	CHIP R 47K J 1/16W	
R620			R92-1252-05	CHIP R 0 OHM	
R621			RK73GB1J103J	CHIP R 10K J 1/16W	
R622			RK73GB1J473J	CHIP R 47K J 1/16W	
R623-627			RK73GB1J102J	CHIP R 1.0K J 1/16W	
R628			RK73GB1J473J	CHIP R 47K J 1/16W	
R629			RK73GB1J102J	CHIP R 1.0K J 1/16W	
R630,631			RK73GB1J473J	CHIP R 47K J 1/16W	
R632			R92-1252-05	CHIP R 0 OHM	
R634,635			R92-1252-05	CHIP R 0 OHM	

PARTS LIST

TX-RX UNIT (X57-6100-XX)

Ref. No.	Address	New parts	Parts No.	Description	Desti-nation
R637,638			R92-1252-05	CHIP R 0 OHM	
R700			RK73GB1J393J	CHIP R 39K J 1/16W	
R701-705			RK73GB1J102J	CHIP R 1.0K J 1/16W	
R706			R92-1252-05	CHIP R 0 OHM	
R707			RK73GB1J104J	CHIP R 100K J 1/16W	
R708			R92-0670-05	CHIP R 0 OHM	
R710			R92-1252-05	CHIP R 0 OHM	
R711			RK73GB1J473J	CHIP R 47K J 1/16W	
R712			RK73GB1J104J	CHIP R 100K J 1/16W	
R713			RK73GB1J473J	CHIP R 47K J 1/16W	
R714			RK73GB1J104J	CHIP R 100K J 1/16W	
R715-720			RK73GB1J473J	CHIP R 47K J 1/16W	
R722			R92-0670-05	CHIP R 0 OHM	
R723			RK73GB1J473J	CHIP R 47K J 1/16W	
R725			R92-0670-05	CHIP R 0 OHM	
R726-728			RK73GB1J473J	CHIP R 47K J 1/16W	
R729			RK73GB1J154J	CHIP R 150K J 1/16W	
R730,731			RK73GB1J334J	CHIP R 330K J 1/16W	
R732,733			R92-1252-05	CHIP R 0 OHM	
R734,735			RK73GB1J103J	CHIP R 10K J 1/16W	
R737			R92-1252-05	CHIP R 0 OHM	
R738			RK73GB1J473J	CHIP R 47K J 1/16W	
R739			RK73GB1J103J	CHIP R 10K J 1/16W	
R740			RK73GB1J473J	CHIP R 47K J 1/16W	
R741			RK73GB1J223J	CHIP R 22K J 1/16W	
R742,743			RK73GB1J184J	CHIP R 180K J 1/16W	
R744			RK73GB1J223J	CHIP R 22K J 1/16W	
R745			RK73GB1J153J	CHIP R 15K J 1/16W	
R746			RK73GB1J103J	CHIP R 10K J 1/16W	
R747			RK73GB1J394J	CHIP R 390K J 1/16W	
R748			RK73GB1J101J	CHIP R 100 J 1/16W	
R749			RK73GB1J104J	CHIP R 100K J 1/16W	
R751			RK73GB1J153J	CHIP R 15K J 1/16W	
R752			R92-1252-05	CHIP R 0 OHM	
R754			RK73GB1J563J	CHIP R 56K J 1/16W	
R755			RK73GB1J154J	CHIP R 150K J 1/16W	
R756			R92-1252-05	CHIP R 0 OHM	
R757			RK73GB1J562J	CHIP R 5.6K J 1/16W	
R758			RK73GB1J474J	CHIP R 470K J 1/16W	
R759			RK73GB1J562J	CHIP R 5.6K J 1/16W	
R760			RK73GB1J472J	CHIP R 4.7K J 1/16W	
R761			RK73GB1J333J	CHIP R 33K J 1/16W	
R762			R92-1252-05	CHIP R 0 OHM	
R763			RK73GB1J472J	CHIP R 4.7K J 1/16W	
R764			RK73GB1J223J	CHIP R 22K J 1/16W	
R765			RK73GB1J334J	CHIP R 330K J 1/16W	
R766			RK73GB1J104J	CHIP R 100K J 1/16W	
R767			RK73GB1J124J	CHIP R 120K J 1/16W	
R768			RK73GB1J223J	CHIP R 22K J 1/16W	
R769			R92-1252-05	CHIP R 0 OHM	
R770			RN73GH1J913D	CHIP R 91K D 1/16W	
R771			RN73GH1J683D	CHIP R 68K D 1/16W	
R772			RK73GB1J103J	CHIP R 10K J 1/16W	
R773			RN73GH1J333D	CHIP R 33K D 1/16W	
R774			RN73GH1J913D	CHIP R 91K D 1/16W	
R775			RN73GH1J274D	CHIP R 270K D 1/16W	
R776			RK73GB1J564J	CHIP R 560K J 1/16W	
R777			RN73GH1J913D	CHIP R 91K D 1/16W	
R778			R92-0670-05	CHIP R 0 OHM	
R779			R92-1252-05	CHIP R 0 OHM	

Ref. No.	Address	New parts	Parts No.	Description	Desti-nation
R780			RK73GB1J104J	CHIP R 100K J 1/16W	
R781			RN73GH1J682D	CHIP R 6.8K D 1/16W	
R782			RK73GB1J472J	CHIP R 4.7K J 1/16W	
R783			RK73GB1J155J	CHIP R 1.5M J 1/16W	
R784,785			RK73GB1J472J	CHIP R 4.7K J 1/16W	
R786			RN73GH1J683D	CHIP R 68K D 1/16W	
R787			RK73GB1J474J	CHIP R 470K J 1/16W	
R788			RK73GB1J472J	CHIP R 4.7K J 1/16W	
R789			RN73GH1J682D	CHIP R 6.8K D 1/16W	
R790			RK73GB1J101J	CHIP R 100 J 1/16W	
R791,792			RK73GB1J104J	CHIP R 100K J 1/16W	
R793			RK73GB1J224J	CHIP R 220K J 1/16W	
R794			RK73GB1J103J	CHIP R 10K J 1/16W	
R795			RK73GB1J223J	CHIP R 22K J 1/16W	
R797			RK73GB1J104J	CHIP R 100K J 1/16W	
R798			RK73GB1J224J	CHIP R 220K J 1/16W	
R799			RK73GB1J393J	CHIP R 39K J 1/16W	
R800			RK73GB1J563J	CHIP R 56K J 1/16W	
R801			RK73GB1J473J	CHIP R 47K J 1/16W	
R802			RK73GB1J394J	CHIP R 390K J 1/16W	
R803,804			RK73GB1J271J	CHIP R 270 J 1/16W	
R805			RK73GB1J470J	CHIP R 47 J 1/16W	
R806			RK73GB1J220J	CHIP R 22 J 1/16W	
R807			RK73GB1J333J	CHIP R 33K J 1/16W	
R808			R92-1252-05	CHIP R 0 OHM	
R809			RK73GB1J473J	CHIP R 47K J 1/16W	
R810			RK73GB1J184J	CHIP R 180K J 1/16W	
R811			RK73GB1J224J	CHIP R 220K J 1/16W	
R812			RK73GB1J104J	CHIP R 100K J 1/16W	
R814			RK73GB1J103J	CHIP R 10K J 1/16W	
R815			R92-1252-05	CHIP R 0 OHM	
R901,902			RK73GB1J473J	CHIP R 47K J 1/16W	
R903,904			R92-2572-05	RESISTOR 330 1/2W	
R905-907			R92-1252-05	CHIP R 0 OHM	
R908			R92-2572-05	RESISTOR 330 1/2W	
R909,910			R92-1201-05	CHIP R 220 1/2W	
R911			R92-2572-05	RESISTOR 330 1/2W	
R912			RK73GB1J100J	CHIP R 10 J 1/16W	
R913			RK73GB1J473J	CHIP R 47K J 1/16W	
R914,915			R92-1201-05	CHIP R 220 1/2W	
R916-923			RK73GB1J102J	CHIP R 1.0K J 1/16W	
R924			RK73GB1J104J	CHIP R 100K J 1/16W	
R925			RK73GB1J274J	CHIP R 270K J 1/16W	
R926-928			RK73GB1J103J	CHIP R 10K J 1/16W	
R929			RK73GB1J100J	CHIP R 10 J 1/16W	
R930			R92-1281-05	RESISTOR 4.7 1/4W	
VR701			R32-0635-05	SEMI FIXED VARIABLE RESISTOR (470)	
VR901	3A	*	R31-0630-05	VARIABLE RESISTOR (10K)	
K1		*	S76-0425-05	RELAY	
D1			HSM88AS	DIODE	
D3			HSM88AS	DIODE	
D4,5			1SS355	DIODE	
D101			DSA3A1-FK	DIODE	
D102			ZSA5A27	ZENER DIODE	
D103			02DZ15(X,Y)	ZENER DIODE	
D104			1SS355	DIODE	
D105			02DZ15(X,Y)	ZENER DIODE	
D106			1SS355	DIODE	
D107			DA204U	DIODE	

PARTS LIST

TX-RX UNIT (X57-6100-XX)

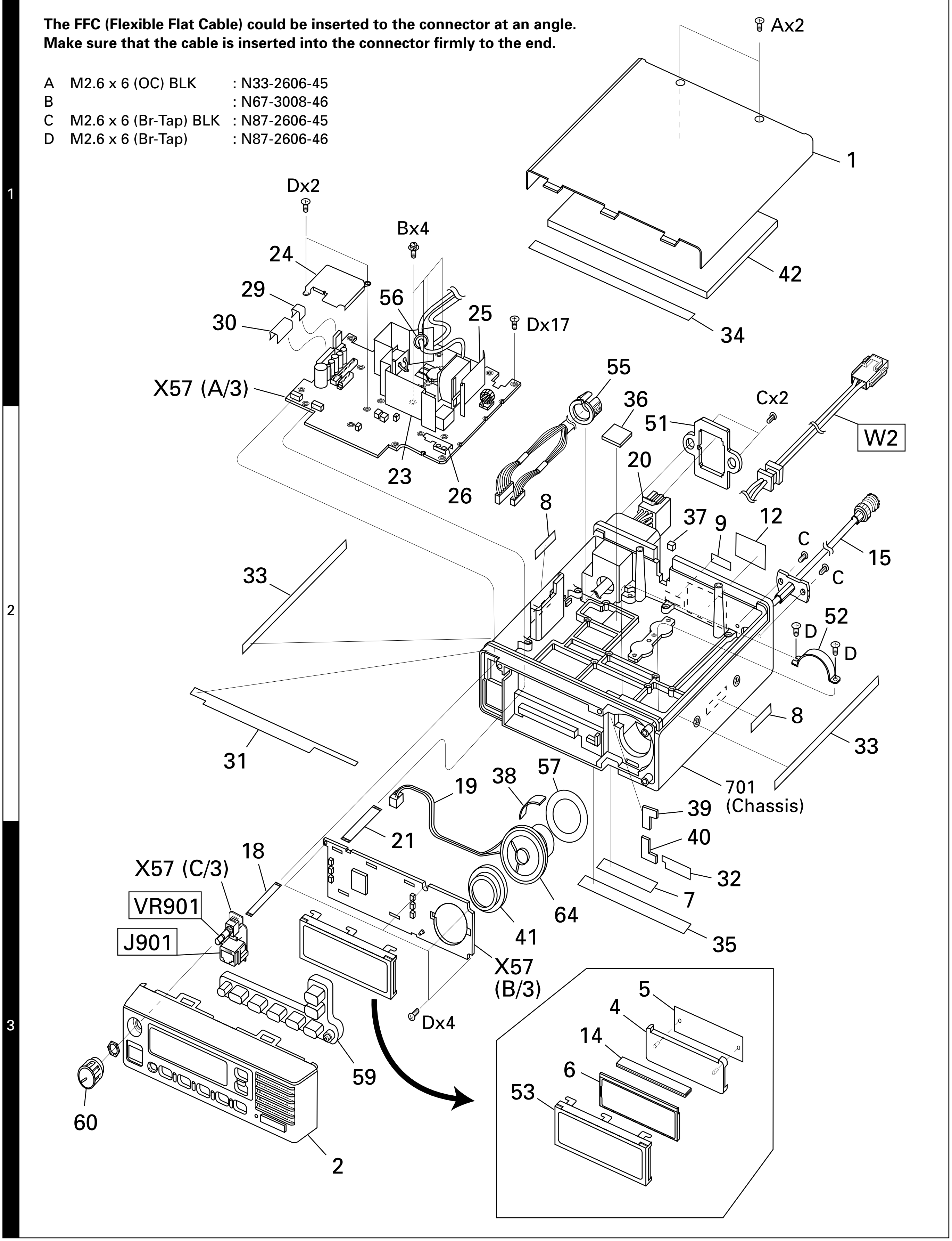
Ref. No.	Address	New parts	Parts No.	Description	Desti-nation
D108			1SS355	DIODE	
D109			02DZ18(X,Y)	ZENER DIODE	
D202-205		*	KV1470	VARIABLE CAPACITANCE DIODE	
D206			MA742	DIODE	
D207			MA2S111	DIODE	
D208			02DZ5.1(Y)	ZENER DIODE	
D401			1SS301	DIODE	
D501-504			MA2S077	DIODE	
D701-710			DA204U	DIODE	
D711			MA742	DIODE	
D912-915			DAP202U	DIODE	
D916			1SS373	DIODE	
IC2			TA75S01F	IC (APC COMPARATOR)	
IC101			TC4013BF(N)	IC (D FLIP-FLOP)	
IC102		*	TDA1519A	IC (AUDIO POWER AMP)	
IC103			TA7808S	IC (VOLTAGE REGULATOR)	
IC104			TK11250BM	IC (VOLTAGE REGULATOR)	
IC105			BU4066BCFV	IC (ANALOG SWITCH)	
IC201			GN2011(Q)	IC (ACTIVE DBM)	
IC202			TA31136FN	IC (FM IF SYSTEM)	
IC203			TC7S66FU	IC (ANALOG SWITCH)	
IC401			MC1350D	IC (AGC AMP)	
IC501			LMX2332LTMX	IC (DUAL-PLL)	
IC601			PST9132NR	IC (VOLTAGE DETECTOR)	
IC602			TK11250BM	IC (VOLTAGE REGULATOR)	
IC603			TC7WU04FU	IC (BUFFER AMP)	
IC604			784214GC0618EU	IC (MICROPROCESSOR)	
IC605			AT2408N10SI2.5	IC (EEPROM)	
IC606			TC7S02FU	IC (NOR GATE)	
IC607			AT29C020-90TI	IC (FLASH ROM)	
IC701-704			BU4094BCFV	IC (SHIFT REGISTER)	
IC705			TA75W01FU	IC (ACTIVE LOW PASS FILTER)	
IC706,707			TC75W51FU	IC (ACTIVE LOW PASS FILTER)	
IC708			LC73872M	IC (DTMF DECODER)	
IC709			TC75W51FU	IC (BUFFER AMP/ACTIVE FILTER)	
IC710			M62364FP	IC (D/A CONVERTER)	
IC711			TC75W51FU	IC (SUMMING/BUFFER AMP)	
IC712			BU4066BCFV	IC (ANALOG SWITCH)	
IC713			TC35453F	IC (AUDIO PROCESSOR)	
IC714			TA75W01FU	IC (AF/BUFFER AMP)	
IC715			M62354GP	IC (D/A CONVERTER)	
IC901			BU4094BCF	IC (SHIFT REGISTER)	
IC902			LC75824W	IC (LCD DRIVER)	
Q1			2SC4649(N,P)	TRANSISTOR	
Q2			2SC3357	TRANSISTOR	
Q3			2SK2596	FET	
Q4,5			2SK3075	FET	
Q6,7		*	2SC2540	TRANSISTOR	
Q8			2SK1824	FET	
Q9			2SA1362(Y)	TRANSISTOR	
Q10			2SK1824	FET	
Q11			DTC114TE	DIGITAL TRANSISTOR	
Q12			2SB1132(Q,R)	TRANSISTOR	
Q13			2SK1824	FET	
Q101			DTA114EE	DIGITAL TRANSISTOR	
Q102			DTA114YE	DIGITAL TRANSISTOR	
Q103			DTA114EE	DIGITAL TRANSISTOR	
Q104			DTC114YE	DIGITAL TRANSISTOR	
Q105			DTA144TE	DIGITAL TRANSISTOR	
Q106			DTC114EE	DIGITAL TRANSISTOR	

Ref. No.	Address	New parts	Parts No.	Description	Desti-nation
Q107			2SK1824	FET	
Q108			DTC114EE	DIGITAL TRANSISTOR	
Q109			2SK1824	FET	
Q110			2SJ506(S)	FET	
Q111			DTA114YE	DIGITAL TRANSISTOR	
Q112			DTC114TE	DIGITAL TRANSISTOR	
Q113-115			2SK1824	FET	
Q117			2SB1132(Q,R)	TRANSISTOR	
Q118,119			2SA1362(Y)	TRANSISTOR	
Q121,122			2SK1824	FET	
Q201			2SK2596	FET	
Q202-204			2SK508NV(K52)	FET	
Q205			2SC4215(Y)	TRANSISTOR	
Q206			2SC4617(S)	TRANSISTOR	
Q401			3SK131(L)	FET	
Q402			2SA1832(GR)	TRANSISTOR	
Q403-406			2SC4738(GR)	TRANSISTOR	
Q407			2SK1824	FET	
Q408			2SA1832(GR)	TRANSISTOR	
Q501			2SC4617(S)	TRANSISTOR	
Q503			3SK131(L)	FET	
Q504			2SC4617(S)	TRANSISTOR	
Q505,506			2SC4649(N,P)	TRANSISTOR	
Q507			2SC4617(S)	TRANSISTOR	
Q601,602			2SK1824	FET	
Q701,702			DTD114EK	DIGITAL TRANSISTOR	
Q703			2SJ243	FET	
Q704			2SK1824	FET	
Q705			2SJ243	FET	
Q706-709			2SK1824	FET	
Q901,902			2SC4617(S)	TRANSISTOR	
Q903-905			2SK1824	FET	
TH1			157-503-65001	THERMISTOR	
TH2,3			157-104-53001	THERMISTOR	
TH201			157-503-65001	THERMISTOR	

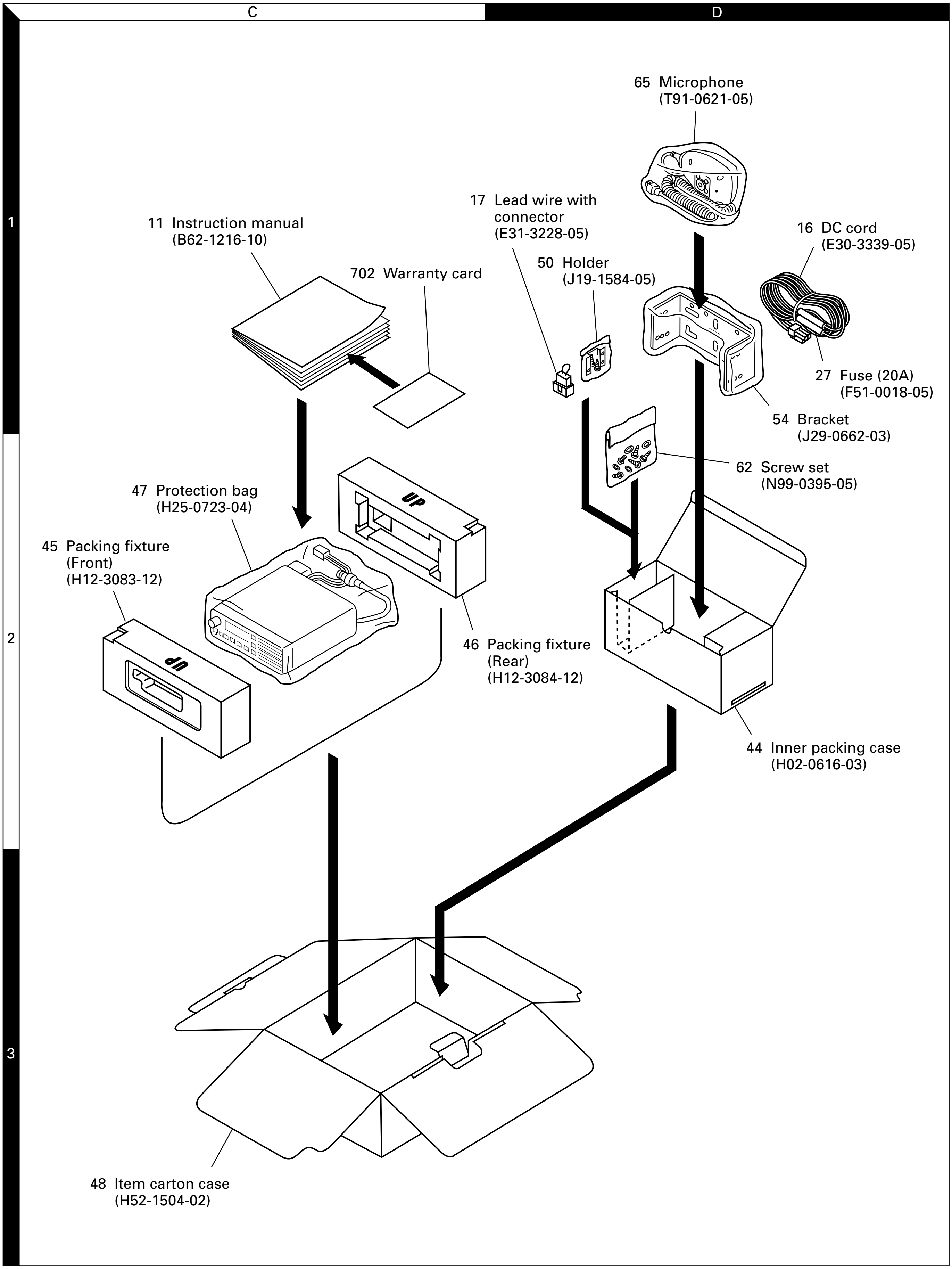
EXPLODED VIEW

The FFC (Flexible Flat Cable) could be inserted to the connector at an angle. Make sure that the cable is inserted into the connector firmly to the end.

A	M2.6 x 6 (OC) BLK	: N33-2606-45
B		: N67-3008-46
C	M2.6 x 6 (Br-Tap) BLK	: N87-2606-45
D	M2.6 x 6 (Br-Tap)	: N87-2606-46



PACKING



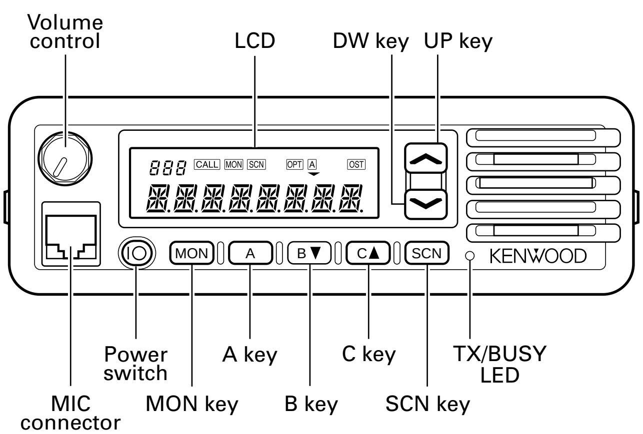
Parts with the exploded numbers larger than 700 are not supplied.

ADJUSTMENT

Key Functions in Panel Test Mode and Panel Tune Mode

Knob/Key	Test mode	Tune mode
︿	Test mode/Tune mode changeover	
﹀	Monitor ON/OFF	
SCN	NB ON/OFF	Tuning value back up
MON	Frequency CH down	Tuning item down
A	Frequency CH up	Tuning item up
B	Signalling CH down	Tuning value down
C	Signalling CH up	Tuning value up

■ Function panel

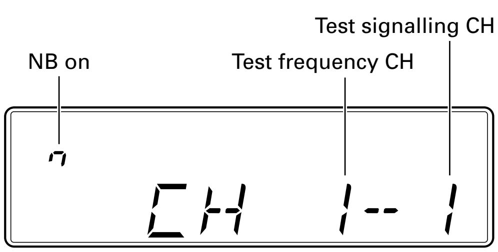


Panel Test Mode

The transceiver's transmission output, receive sensitivity, and other items are measured and QT, DQT, 2-tone and DTMF signaling is decoded in this mode.

■ To enter the panel test mode

Hold down [MON] and turn the power switch on to enter this mode. The test frequency channel and test signalling channel will be displayed.



Note : When a key other than GRP down is pressed, the optional signalling is reset.

■ Test frequency channel (MHz) : Default setting

CH	K		K2	
	TX	RX	TX	RX
1 (Center)	33.300	33.400	42.500	42.600
2 (Low)	29.700	29.800	35.000	35.100
3 (High)	37.000	36.900	50.000	49.900
4	33.300	33.300	42.500	42.500
5	33.500	33.500	42.700	42.700
6	33.700	33.700	42.900	42.900

■ Test signalling channel : Default setting

CH No.	Encode tone	Decode tone
1	None	None
2	100Hz square wave	None
3	QT 67.0Hz	QT 67.0Hz
4	QT 151.4Hz	QT 151.4Hz
5	QT 210.7Hz	QT 210.7Hz
6	DQT 023N	DQT 023N
7	Single tone 1633Hz	2-tone 321.7/928.1Hz
8	DTMF [9]	DTMF [159]
9	MSK	None

Panel Tune Mode

The transceiver is adjusted in this mode.

■ To enter the panel tune mode

Press the [︿] key in the panel test mode.

The adjustment items, the frequency and signalling, other than the maximum deviation and sensitivity, return to the values that were effective for the test frequency channel and test signalling channel before entering the panel tune mode.

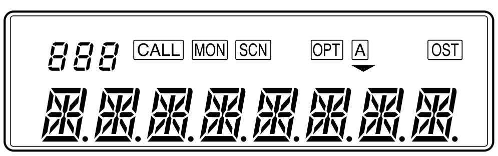
ADJUSTMENT

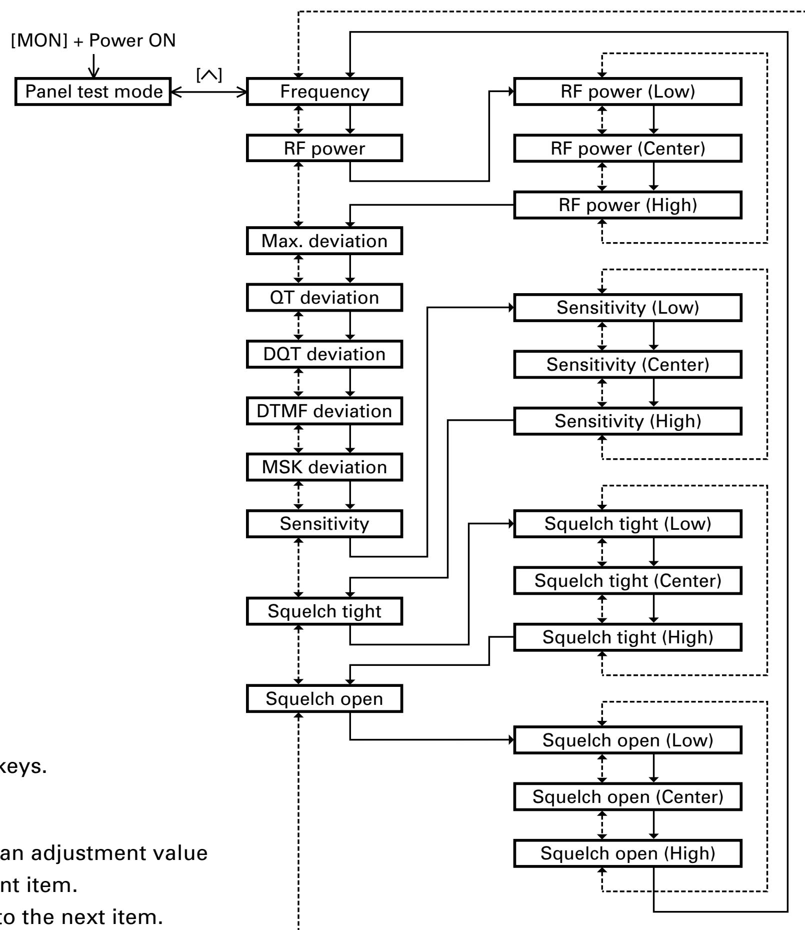
■ Tuning item and display (XXX : 0~255)

Tuning item	Display	Note
Frequency	FREQ_XXX	
RF power	_POW_XXX	
RF power (Low)	_POW_XXX	Three digits on the upper left side: "_ _ L". Transmission and reception at the low edge.
RF power (Center)	_POW_XXX	Three digits on the upper left side: "_ _ C". Transmission and reception at the center.
RF power (High)	_POW_XXX	Three digits on the upper left side: "_ _ H". Transmission and reception at the high edge.
Max. deviation	MXDV_XXX	
QT deviation	QTDV_XXX	
DQT deviation	DQDV_XXX	
DTMF deviation	DTDV_XXX	
MSK deviation	MSDV_XXX	
Sensitivity	SENS_XXX	
Sensitivity (Low)	SENS_XXX	Three digits on the upper left side: "_ _ L". Transmission and reception at the low edge.
Sencitivity (Center)	SENS_XXX	Three digits on the upper left side: "_ _ C". Transmission and reception at the center.
Sensitivity (High)	SENS_XXX	Three digits on the upper left side: "_ _ H". Transmission and reception at the high edge.
Squelch tight point	SQ_T_XXX	
Squelch tight (Low)	SQ_T_XXX	Three digits on the upper left side: "_ _ L". Transmission and reception at the low edge.
Squelch tight (Center)	SQ_T_XXX	Three digits on the upper left side: "_ _ C". Transmission and reception at the center.
Squelch tight (High)	SQ_T_XXX	Three digits on the upper left side: "_ _ H". Transmission and reception at the high edge.
Squelch open point	SQ_O_XXX	
Squelch open (Low)	SQ_O_XXX	Three digits on the upper left side: "_ _ L". Transmission and reception at the low edge.
Squelch open (Center)	SQ_O_XXX	Three digits on the upper left side: "_ _ C". Transmission and reception at the center.
Squelch open (High)	SQ_O_XXX	Three digits on the upper left side: "_ _ H". Transmission and reception at the high edge.

Caution : When squelch open level data is memorized, RSSI level data is memorized at the same time.

- **Display**





↕ : Use the [MON] and [A] keys.

↓ : Use the [SCN] key.

Use the [B] or [C] key to set an adjustment value (0 to 255) for each adjustment item.
Use the [SCN] key to move to the next item.

ADJUSTMENT

Test Equipment Required for Alignment

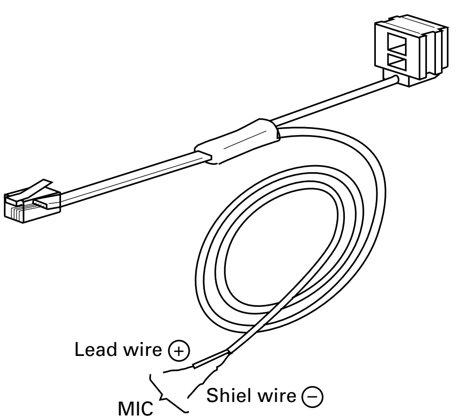
No.	Test Equipment	Major Specifications	
1	Standard Signal Generator (SSG)	Frequency Range Modulation Output	50kHz to 1000MHz. Frequency modulation and external modulation. 0.1µV to greater than 1mV.
2	Power Meter	Input Impedance Operation Frequency Measurement Capability	50Ω. 50MHz or less. Vicinity of 100W.
3	Deviation Meter	Frequency Range	29.7 to 50.0MHz.
4	Digital Volt Meter (DVM)	Measuring Range Accuracy	1 to 20V DC. High input impedance for minimum circuit loading.
5	Oscilloscope		DC through 30MHz.
6	High sensitivity Frequency Counter	Frequency Range Frequency Stability	10Hz to 200MHz. 0.2ppm or less.
7	Ammeter		30A.
8	AF Volt Meter (AFVTVM)	Frequency Range Voltage Range	50Hz to 10kHz. 3mV to 3V.
9	Audio Generator (AG)	Frequency Range Output	50Hz to 5kHz or more. 0 to 1V.
10	Distortion Meter	Capability Input Level	3% or less at 1kHz. 50mV to 10Vrms.
11	Voltmeter	Measuring Range Input Impedance	10 to 1.5V DC or less. 50kΩ/V or greater.
12	4Ω Dummy Load		Approx. 4Ω 30W.
13	Regulated Power Supply		(Adjustable from 9 to 17V, 30A). Useful if ammeter equipped.

Caution

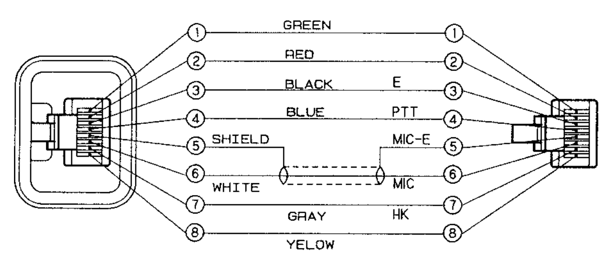
Since the RX AF output is a BTL output, there is a DC Component. Isolate this with a capacitor or transformer as shown in the figure.

Tuning cable (E30-3383-05)

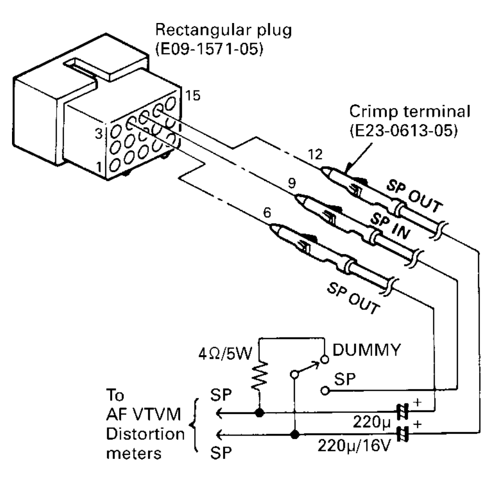
Adapter cable (E30-3383-05) is required for injecting an audio if PC tuning is used.
See “PC Mode” section for the connection.



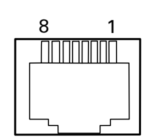
Test cable for microphone input (E30-3360-08)



Test cable for speaker output



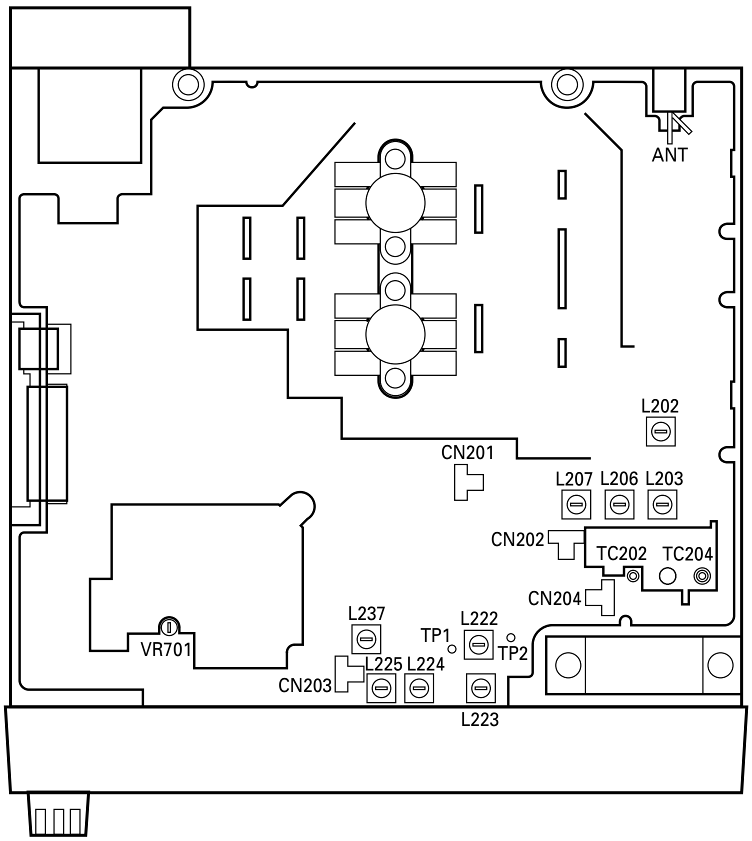
MIC connector (Front view)



1 : BLC
2 : PSB
3 : E
4 : PTT
5 : ME
6 : MIC
7 : HOOK
8 : CM

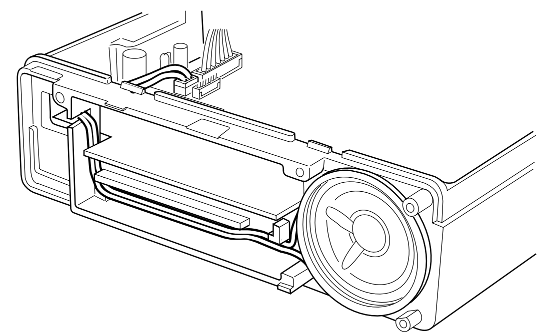
ADJUSTMENT

Adjustment Points



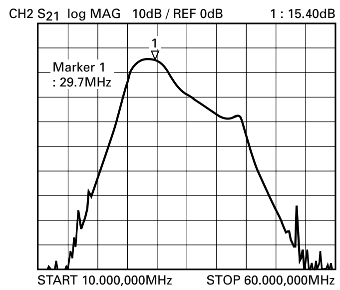
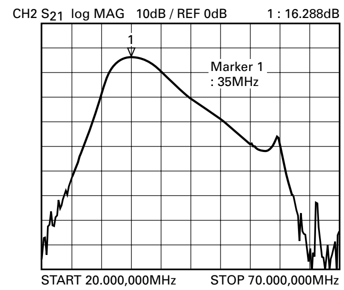
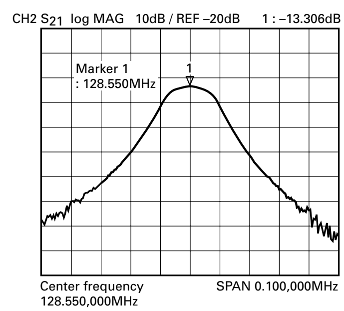
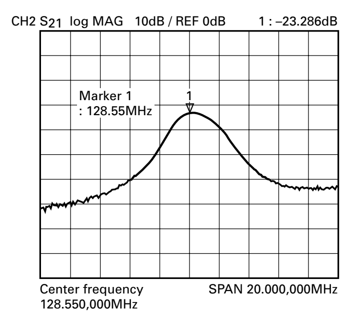
Disassembly for Repair (Speaker)

To install the speaker and to style wiring from the speaker, follow the instructions given in the diagram below.



Item	Condition	Measurement			Adjustment			Specifications/Remarks
		Test-equipment	Unit	Terminal	Unit	Parts	Method	
1. PLL lock voltage check Main VCO	1) CH-SIG : 2-1	DC VM Power meter	TX-RX (A/3)	TP1			Check	1.0~1.6V : K 1.5~2.3V : K2
	2) CH-SIG : 3-1							1.7~2.6V : K 3.0~4.3V : K2
Sub RX-center	3) CH-SIG : 1-1			TP2				1.7~3.3V
2. Transmit frequency	1) CH-SIG : 1-1 Select FREQ_XXX in tune mode PTT : ON	Power meter f. counter	Rear panel	ANT	Front panel	B key C key	CH1 frequency	±100Hz

ADJUSTMENT

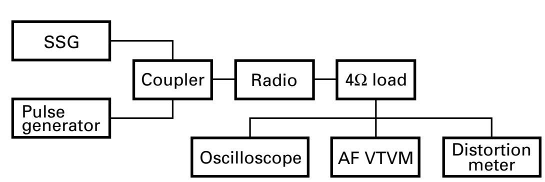
Item	Condition	Measurement			Adjustment			Specifications/Remarks
		Test-equipment	Unit	Terminal	Unit	Parts	Method	
3. BPF	1) CH-SIG : 2-1 Select _ _L SENS_ _75 : K SENS_ _50 : K2 in tune mode Spectrum analyzer Span : 50MHz Scale : 10dB/div Tracking generator Output : –20dBm	Spectrum analyzer Tracking generator	TX-RX (A/3) Rear panel	CN201 ANT	TX-RX (A/3)	L202 L203 L206 L207	Adjust the coils in the following order : L202, L203, L206, L207 K  	Adjust it so it is almost symmetrical, and so the gain is maximum. K2 
4. MCF	1) CH-SIG : 1-1 Spectrum analyzer Span : 25kHz Scale : 10dB/div Center frequency : 128.55MHz Tracking generator Output : –20dBm	Spectrum analyzer Tracking generator	TX-RX (A/3)	CN203 CN204	TX-RX (A/3)	L222 L223 L224 L225	Adjust it so it is almost symmetrical, and so the gain is maximum. Adjust the coils in the following order : L222, L223, L224, L225.  	
5. Delay line NB	1) CH-SIG : 1-1 Spectrum analyzer Span : 20MHz Scale : 10dB/div Center frequency : 128.55MHz Tracking generator Output : –20dBm	Spectrum analyzer Tracking generator	TX-RX (A/3)	CN204 CN202	TX-RX (A/3)	TC202 TC204	Adjust it so it is almost symmetrical, and so the gain is maximum.  	
6. Distortion	1) CH-SIG : 1-1 SSG output : –53dBm/501µV AF output : 1V/4Ω	SSG Distortion meter AF VTVM Oscilloscope 4Ω dummy load	Rear panel	ANT EXT.SP	TX-RX (A/3)	L237	Adjust it, and so the distortion is minimum.	Distortion is minimum.

ADJUSTMENT

Item	Condition	Measurement			Adjustment			Specifications/Remarks
		Test-equipment	Unit	Terminal	Unit	Parts	Method	
7. RF power	1) RF power _POW_XXX Adjust the RF power. All values in Low, Center and High frequencies changes one time.	Power meter Ammeter	Rear panel	ANT	Front panel	B key C key	70W 15A or less	70w ±1.0W 15A or less
	2) Select _ _L _POW_XXX in tune mode PTT : ON							
	3) Select _ _C _POW_XXX in tune mode PTT : ON							
	4) Select _ _H _POW_XXX in tune mode PTT : ON							
8. Maximum deviation	1) CH-SIG : 1-1 Select MXDV_XXX in tune mode PTT : ON Deviation meter filter HPF : OFF, LPF : 15kHz De-emphasis : OFF AG : 1kHz/50mV	Power meter Deviation meter AF VTVM AG Oscilloscope	Rear panel Front panel	ANT MIC	Front panel	B key C key	±4.05kHz	±0.1kHz
9. MIC sensitivity	1) CH-SIG : 1-1 PTT : ON Deviation meter filter HPF : OFF LPF : 15kHz De-emphasis : OFF AG : 1kHz/5mV				TX-RX (A/3)	VR701	Check	2.2~3.8kHz
10. QT deviation	1) CH-SIG : 1-4 Select QTDV_XXX in tune mode PTT : ON Deviation meter filter HPF : OFF LPF : 3kHz De-emphasis : OFF				Front panel	B key C key	±0.75kHz	±0.05kHz
11. DQT deviation	1) CH-SIG : 1-6 Select DQDV_XXX in tune mode PTT : ON Deviation meter filter HPF : OFF, LPF : 3kHz De-emphasis : OFF						±0.75kHz	±0.05kHz
12. DTMF deviation	1) CH-SIG : 1-8 Select DTDV_XXX in tune mode PTT : ON Deviation meter filter HPF : OFF, LPF : 15kHz De-emphasis : OFF						±3.0kHz	±0.1kHz
13. MSK deviation	1) CH-SIG : 1-9 Select MSDV_XXX in tune mode PTT : ON Deviation meter filter HPF : OFF, LPF : 15kHz De-emphasis : OFF						±3.0kHz	±0.1kHz

ADJUSTMENT

Item	Condition	Measurement			Adjustment			Specifications/Remarks
		Test-equipment	Unit	Terminal	Unit	Parts	Method	
14. Sensitivity	1) Sensitivity SENS_XXX Adjust the sensitivity. All values in Low, Center and High frequencies changes one time.	SSG AF VTVM Distortion meter Oscilloscope 4Ω dummy load	Rear panel	ANT EXT.SP	Front panel TX-RX (A/3)	B key C key L237		SINAD 12dB or more
	2) Select _ _L SENS_ _75 : K SENS_ _50 : K2 in tune mode SSG output : –116dBm/0.35µV AF output : 0.25µV/4Ω						Low check	
	3) Select _ _C SENS_130 in tune mode						Center check	
	4) Select _ _H SENS_230 in tune mode						High check	
15. Squelch tight point	1) Squelch tight point SQ_T_XXX Adjust the squelch tight point. All values in Low, Center and High frequencies changes one time.				Front panel	B key C key	Adjust to point of opening squelch	
	2) Select _ _L SQ_T_XXX in tune mode SSG output : Value when 7dB is added from the sensitivity value of 12dB SINAD. NB : ON							
	3) Select _ _C SQ_T_XXX in tune mode							
	4) Select _ _H SQ_T_XXX in tune mode							
16. Squelch open point	1) Squelch open point SQ_O_XXX Adjust the squelch open point. All values in Low, Center and High frequencies changes one time.							
	2) Select _ _L SQ_O_XXX in tune mode SSG output : Value when 3dB is subtracted from the sensitivity value of 12dB SINAD. NB : ON							
	3) SSG output : OFF						Check	Squelch must be closed.
	4) Select _ _C SQ_O_XXX in tune mode				Front panel	B key C key	Adjust to point of opening squelch	
	5) SSG output : OFF						Check	Squelch must be closed.
	6) Select _ _H SQ_O_XXX in tune mode				Front panel	B key C key	Adjust to point of opening squelch	
	7) SSG output : OFF						Check	Squelch must be closed.
17. NB	1) CH-SIG : 1-1 SSG output : –109dBm/0.8µV Pulse generator Output : 0.5Vp-p/50Ω Cycle : 100µsec Pulse width : 10ns NB : ON	SSG Pulse generator Distortion meter Oscilloscope AF VTVM	Rear panel	ANT EXT.SP			Check	SINAD 12dB or more



TERMINAL FUNCTION

TX-RX Unit (X57-6100-XX) (A/3) to Display Unit (X57-6100-XX) (B/3)

CN1	CN904	Pin Name	Function
1	17	NC	(SB)
2	16	PSW	Power SW control “L” : On/Off
3	15	GND	GND
4	14	K1	Key scan 1
5	13	K2	Key scan 2
6	12	KES	BU4094BCF STRB
7	11	DAT	Data
8	10	CLK	Clock
9	9	GND	GND
10	8	LCDCS	LC75824W CS
11	7	GND	GND
12	6	5CM	5CM
13	5	8C	8C
14	4	8C	8C
15	3	TXLED	TXLED “L” : On, “H” : Off
16	2	RXLED	RXLED “L” : On, “H” : Off
17	1	BLC	Back light control “L” : Off, “H” : On

TX-RX Unit (X57-6100-XX) (A/3) to MIC & VOL Unit (X57-6100-XX) (C/3)

CN3	CN902	Pin Name	Function
1	13	BLC	Back light control “H” : On
2	12	SB	SB
3	11	GND	GND
4	10	PTT/TXD	PTT 1 / TXD
5	9	ME	ME
6	8	MIC	MIC1
7	7	HK/RXD	Hook 1 / RXD 1 On hook : “L”
8	6	GND	GND
9	5	CM	DTMF Key Scan
10	4	GND	GND
11	3	GND	GND
12	2	VOL	Volume level det
13	1	5CM	5V

TX-RX Unit (X57-6100-XX) (A/3) to ACC15 pin (1/2)

CN4	ACC15	Pin Name	Function
1	13	SPG	Speaker ground
2	9	ISP	Internal speaker
3	6	ES1	External speaker
4	12	ES2	External speaker
5	15	GND	GND
6	7	SB	SB
7	3	IGN	Ignition sense input

Note : Pin 9 and pin 12 of the 15-pin connector are connected with a jumper.

TX-RX Unit (X57-6100-XX) (A/3) to ACC15 pin (2/2)

CN2	ACC15	Pin Name	Function
1	4	DEO	Detect signal output
2	1	HK2	Hook 2
3	10	HR	Hone alert control
4	5	MI2	Mic input 2
5	2	FSW	Foot SW
6	11	AUX	Accessory port
7	8	PTT2	PTT input 2
8	14	SQ	Squelch signal output

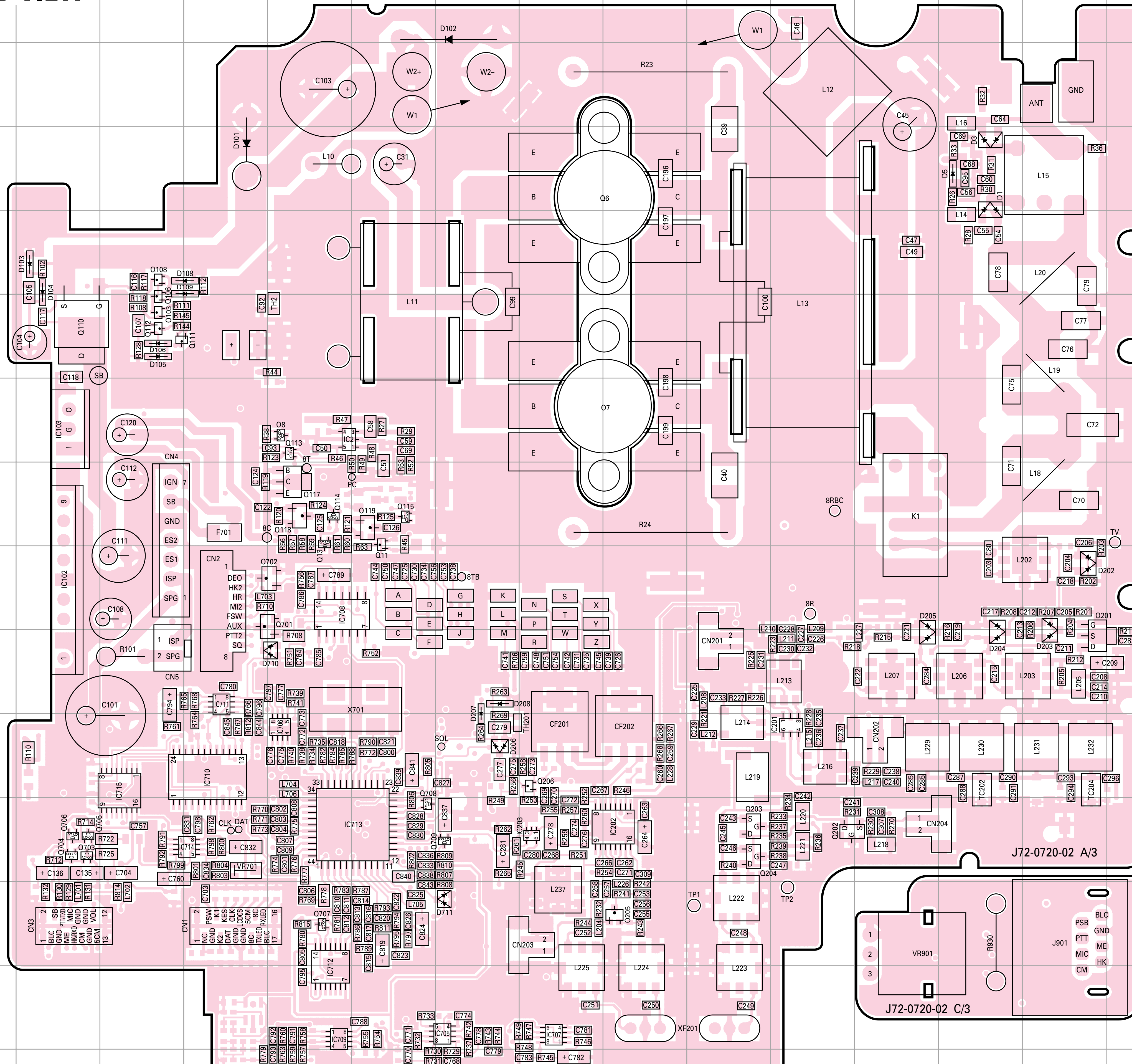
TX-RX Unit (X57-6100-XX) (A/3) to Internal SP

CN5	SP	Pin Name	Function
1	+	ISP	Internal speaker
2	–	SPGR	Speaker ground through R

TK-6110 PC BOARD VIEW

TX-RX UNIT (X57-6100-XX) (A/3, C/3) -10 : K -11 : K2 Component side view

Ref. No.	Address	Ref. No.	Address
IC2	6H	Q202	11N
IC102	8E	Q203	11M
IC103	6E	Q204	11M
IC201	10N	Q205	12L
IC202	11L	Q206	10K
IC203	11K	Q701	8H
IC705	13J	Q702	8H
IC706	10H	Q703	11E
IC707	13K	Q704	11E
IC708	8H	Q705	11E
IC709	13H	Q706	11E
IC710	10G	Q707	12H
IC711	9G	Q708	11I
IC712	13H	Q709	11J
IC713	11I	D1	3P
IC714	11G	D3	3P
IC715	10F	D5	3P
Q6	3L	D101	3G
Q7	6L	D102	1J
Q8	6H	D103	4E
Q11	7I	D104	4E
Q13	7H	D105	5F
Q103	5F	D106	5F
Q106	5F	D108	4G
Q108	4F	D109	4G
Q110	5E	D202	8Q
Q111	5F	D203	9Q
Q112	5F	D204	9P
Q113	6H	D205	9O
Q114	7H	D206	10J
Q115	7I	D207	10J
Q117	7H	D208	9J
Q118	7H	D710	9H
Q119	7I	D711	12J
Q201	9Q		



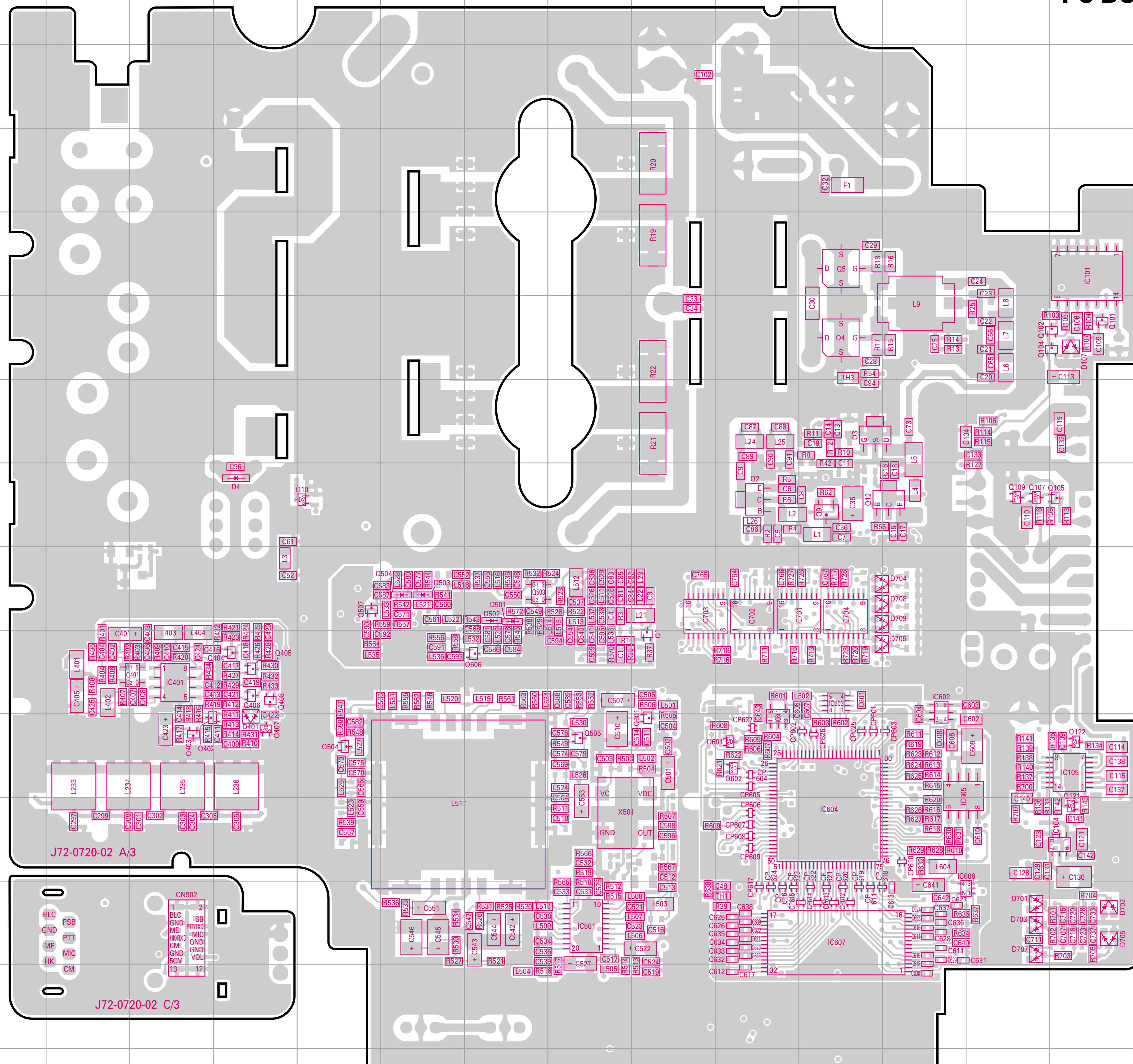
Component side

- Pattern 1
- Pattern 2
- Pattern 3
- Pattern 4
- Pattern 5
- Pattern 6

Foil side

PC BOARD VIEW TK-6110

TX-RX UNIT (X57-6100-XX) (A/3, C/3) -10 : K -11 : K2 Foil side view



Ref. No.	Address	Ref. No.	Address
IC101	4O	Q401	9D
IC104	11O	Q402	10D
IC105	10O	Q403	10D
IC401	9D	Q404	9E
IC501	12I	Q405	9E
IC601	10K	Q406	9E
IC602	9M	Q407	10E
IC603	9L	Q408	9E
IC604	11L	Q501	10J
IC605	10M	Q503	8H
IC606	12N	Q504	10F
IC607	12L	Q505	10I
IC701	8L	Q506	9H
IC702	8K	Q507	8F
IC703	8J	Q601	10K
IC704	8L	Q602	10K
Q1	9J	D4	7E
Q2	7K	D107	5O
Q3	6L	D401	10E
Q4	5L	D501	8H
Q5	4L	D502	8H
Q9	7L	D503	8G
Q10	7F	D504	8G
Q12	7M	D701	12N
Q101	5O	D702	12O
Q102	5O	D703	12N
Q104	5O	D704	8M
Q105	7O	D705	12O
Q107	7N	D706	9M
Q109	7N	D707	12N
Q121	11O	D708	8M
Q122	10O	D709	8M

Component side

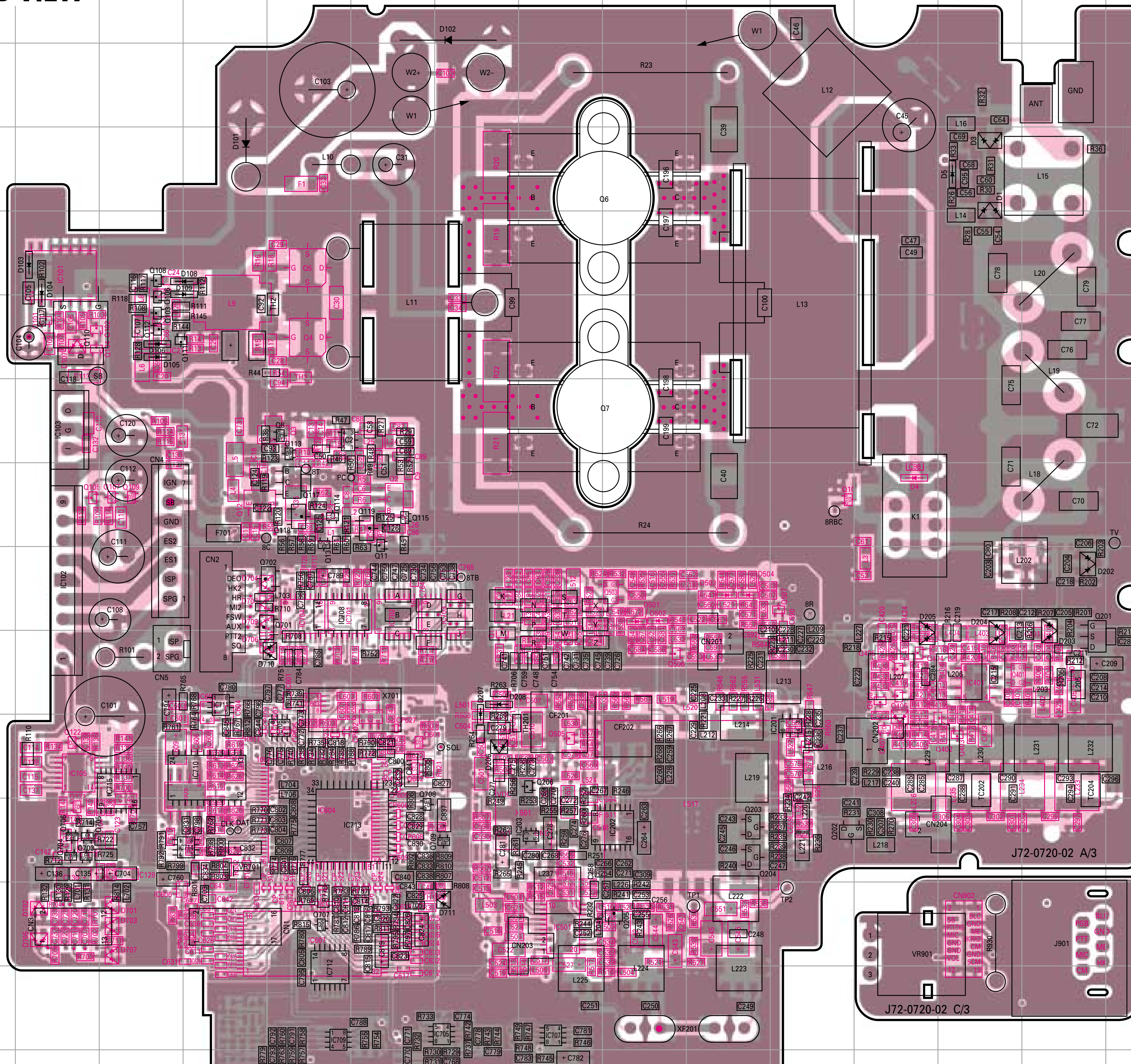
Pattern 1
Pattern 2
Pattern 3
Pattern 4
Pattern 5
Pattern 6

Foil side

TK-6110 PC BOARD VIEW

TX-RX UNIT (X57-6100-XX) (A/3, C/3) -10 : K -11 : K2 Component side view + Foil side

Ref. No.	Address	Ref. No.	Address	Ref. No.	Address
IC2	6H	Q13	7H	Q703	11E
IC101	4E	Q101	5E	Q704	11E
IC102	8E	Q102	5E	Q705	11E
IC103	6E	Q103	5F	Q706	11E
IC104	11E	Q104	5E	Q707	12H
IC105	10E	Q105	7E	Q708	11I
IC201	10N	Q106	5F	Q709	11J
IC202	11L	Q107	7F	D1	3P
IC203	11K	Q108	4F	D3	3P
IC401	9P	Q109	7F	D4	7O
IC501	12K	Q110	5E	D5	3P
IC601	10I	Q111	5F	D101	3G
IC602	9G	Q112	5F	D102	1J
IC603	9H	Q113	6H	D103	4E
IC604	11H	Q114	7H	D104	4E
IC605	10G	Q115	7I	D105	5F
IC606	12F	Q117	7H	D106	5F
IC607	12H	Q118	7H	D107	5E
IC701	8H	Q119	7I	D108	4G
IC702	8I	Q121	11E	D109	4G
IC703	8J	Q122	10E	D202	8Q
IC704	8H	Q201	9Q	D203	9Q
IC705	13J	Q202	11N	D204	9P
IC706	10H	Q203	11M	D205	9O
IC707	13K	Q204	11M	D206	10J
IC708	8H	Q205	12L	D207	10J
IC709	13H	Q206	10K	D208	9J
IC710	10G	Q401	9P	D401	10O
IC711	9G	Q402	10P	D501	8L
IC712	13H	Q403	10P	D502	8L
IC713	11I	Q404	9O	D503	8M
IC714	11G	Q405	9O	D504	8M
IC715	10F	Q406	9O	D701	12F
Q1	9J	Q407	10O	D702	12E
Q2	7I	Q408	9O	D703	12F
Q3	6H	Q501	10J	D704	8G
Q4	5H	Q503	8L	D705	12E
Q5	4H	Q504	10N	D706	9G
Q6	3L	Q505	10K	D707	12F
Q7	6L	Q506	9L	D708	8G
Q8	6H	Q507	8N	D709	8G
Q9	7H	Q601	10I	D710	9H
Q10	7N	Q602	10I	D711	12J
Q11	7I	Q701	9H		
Q12	7G	Q702	8H		



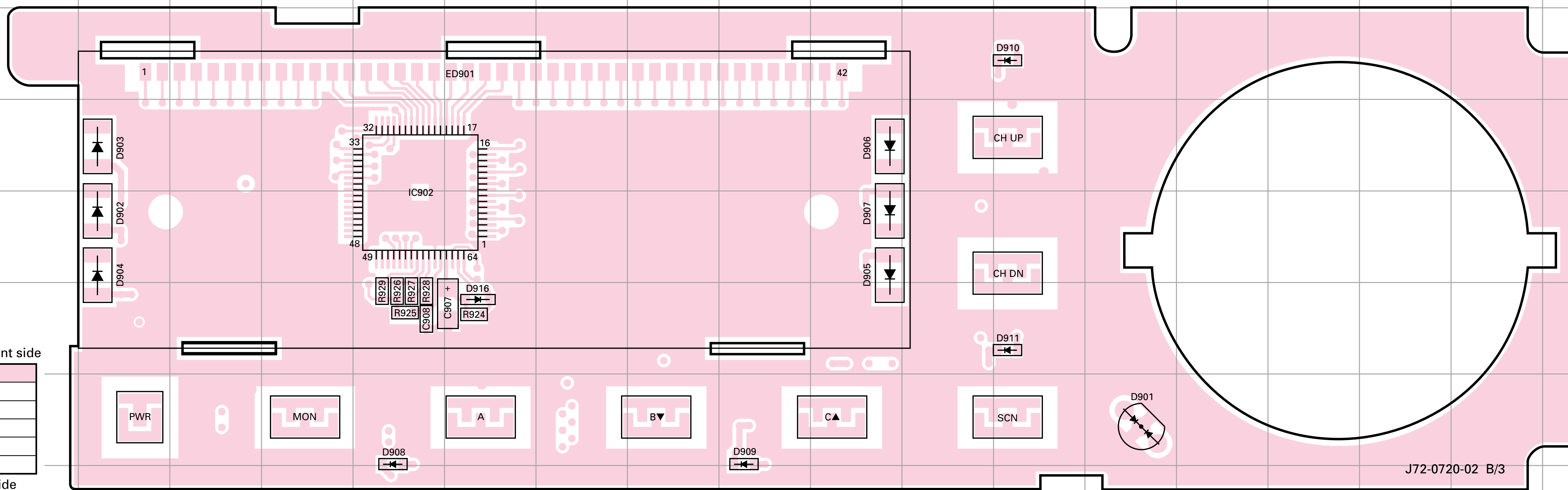
Component side
Pattern 1
Pattern 2
Pattern 3
Pattern 4
Pattern 5
Pattern 6
Foil side

● Connect 1 and 6

TX-RX UNIT (X57-6100-XX) (B/3) -10 : K -11 : K2 Component side view

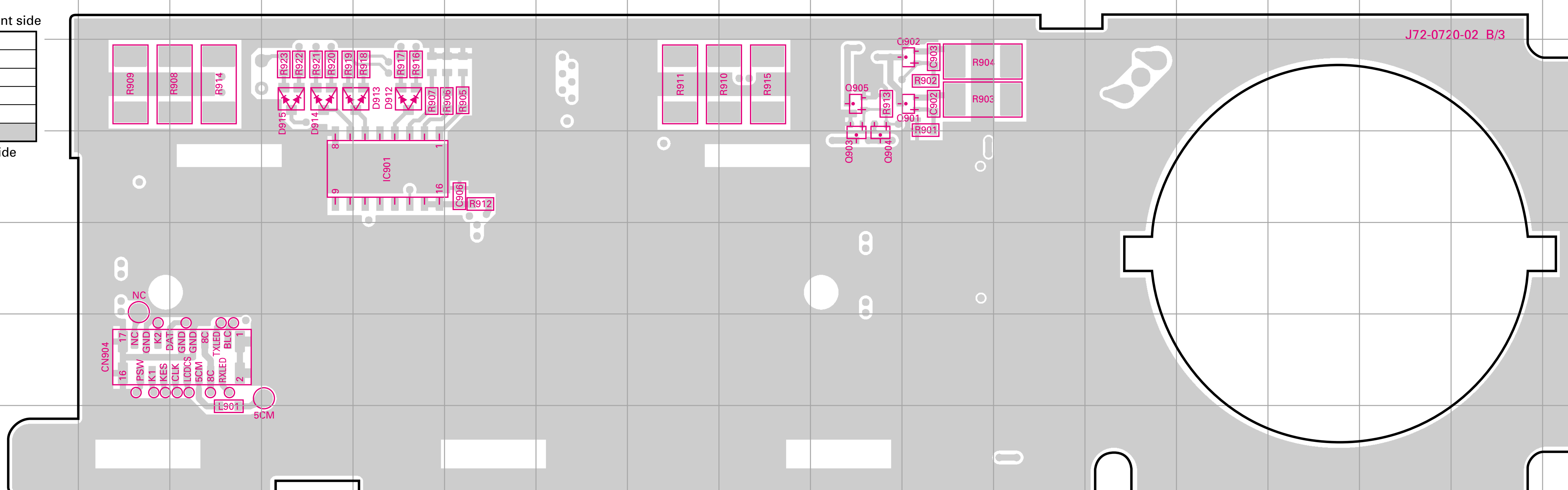
Ref. No.	Address
IC902	4F
D901	6N
D902	4C
D903	3C
D904	4C
D905	4K
D906	3K
D907	4K
D908	6F
D909	6J
D910	2M
D911	5M
D916	5G

Component side
Pattern 1
Pattern 2
Pattern 3
Pattern 4
Pattern 5
Pattern 6
Foil side



TX-RX UNIT (X57-6100-XX) (B/3) -10 : K -11 : K2 Foil side view

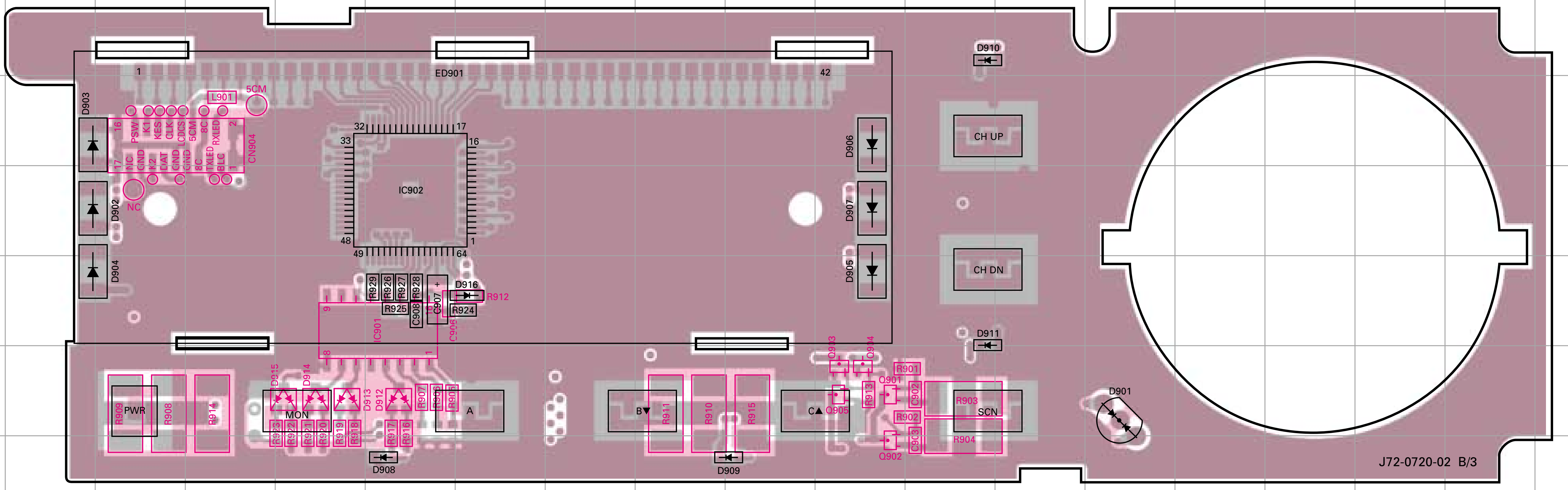
Component side
Pattern 1
Pattern 2
Pattern 3
Pattern 4
Pattern 5
Pattern 6
Foil side



Ref. No.	Address
IC901	10F
Q901	9L
Q902	9L
Q903	10K
Q904	10K
Q905	9K
D912	9F
D913	9F
D914	9E
D915	9E

TK-6110 PC BOARD VIEW

TX-RX UNIT (X57-6100-XX) (B/3) -10 : K -11 : K2 Component side view + Foil side



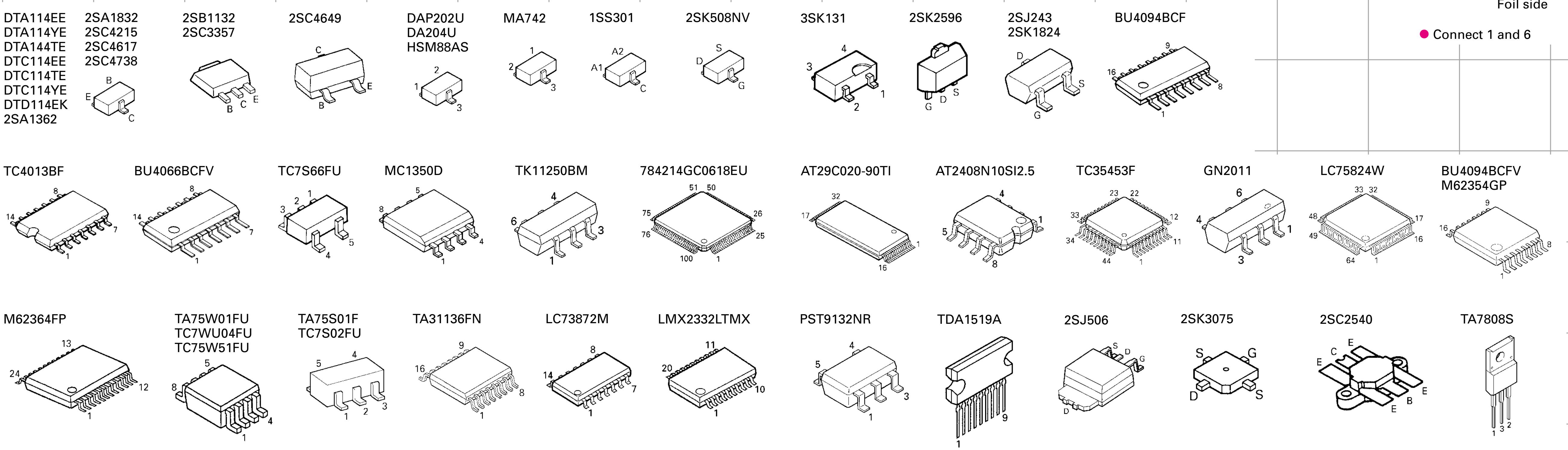
Ref. No.	Address	Ref. No.	Address	Ref. No.	Address	Ref. No.	Address	Ref. No.	Address
IC901	5F	Q904	6K	D904	5B	D909	7J	D914	6E
IC902	4F	Q905	6K	D905	5K	D910	2L	D915	6E
Q901	6K	D901	6N	D906	3K	D911	5L	D916	5G
Q902	7K	D902	4B	D907	4K	D912	6F		
Q903	6K	D903	3B	D908	7F	D913	6E		

Component side

Pattern 1
Pattern 2
Pattern 3
Pattern 4
Pattern 5
Pattern 6


Foil side

● Connect 1 and 6



Note : Components marked with a dot (•) are parts of patterun 1.

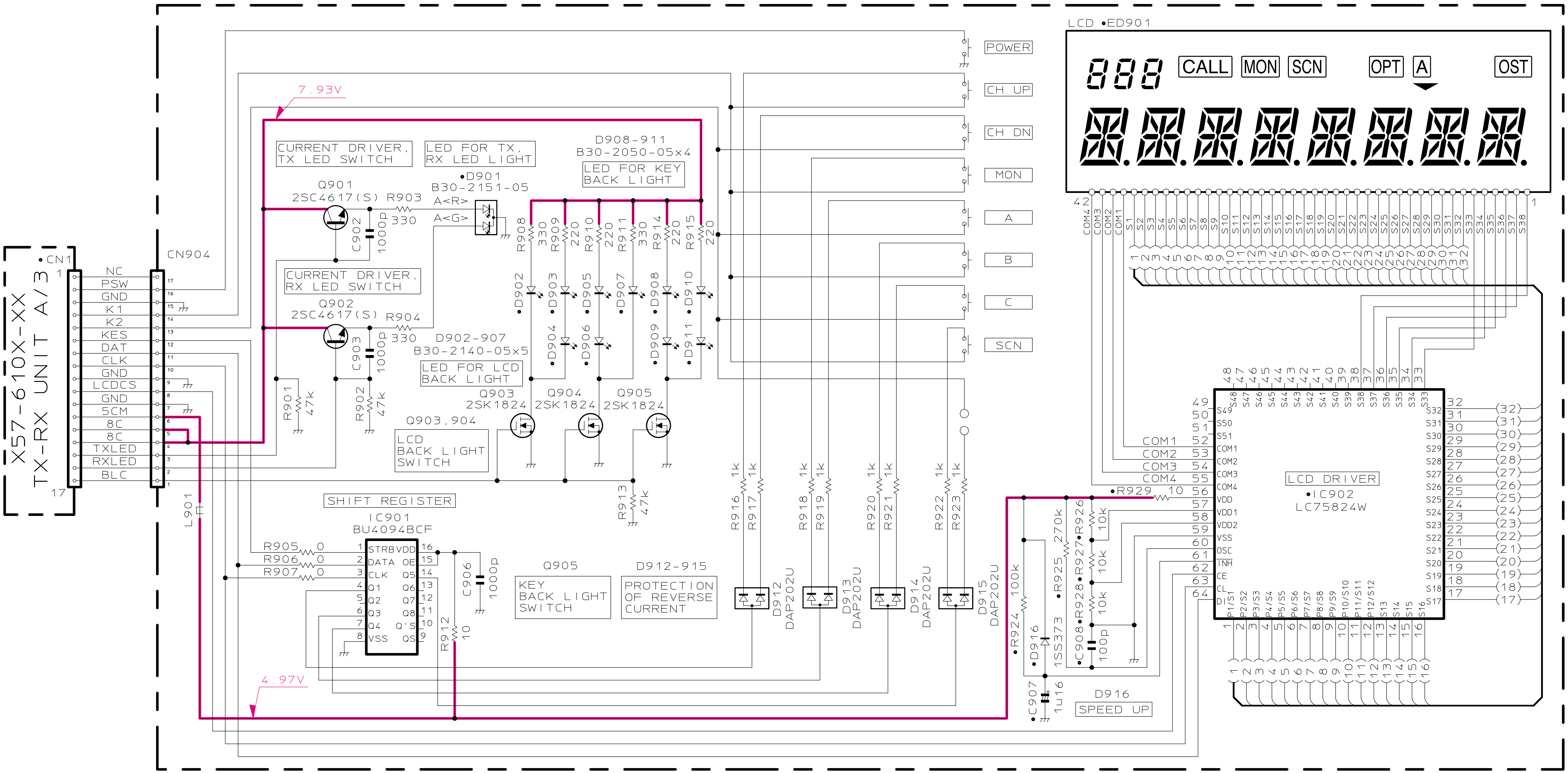
SCHEMATIC DIAGRAM TK-6110



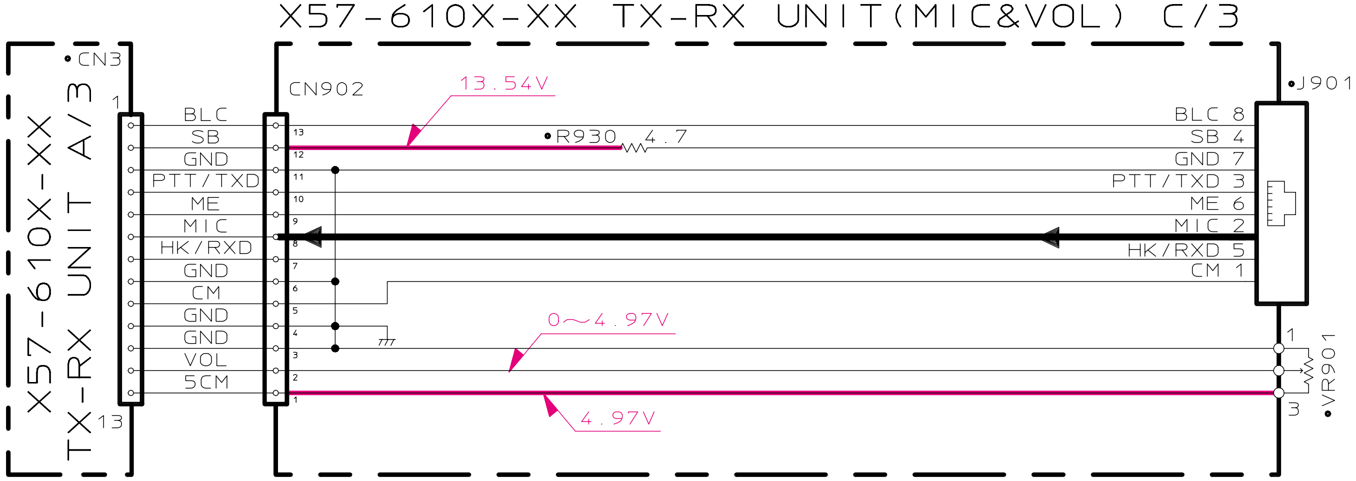
TK-6110 SCHEMATIC DIAGRAM

Note : Components marked with a dot (·) are parts of patterun 1.

X57-610X-XX TX-RX UNIT(DISPLAY) B/3



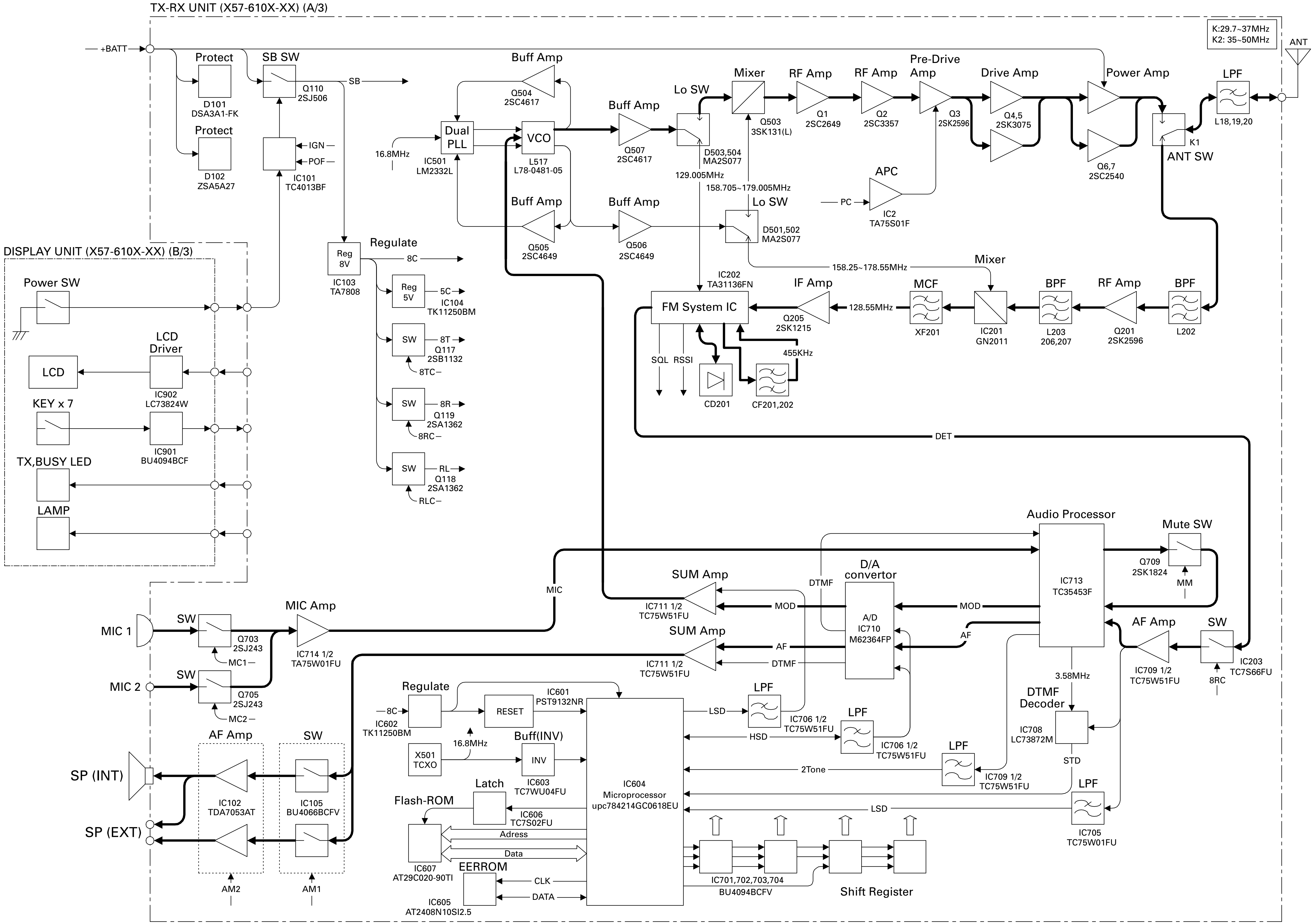
X57-610X-XX TX-RX UNIT(MIC&VOL) C/3



D901	: B30-2151-05
D902-907	: B30-2140-05
D908-911	: B30-2050-05
D912-915	: DAP202U
D916	: 1SS373
Q901,902	: 2SC4617(S)
Q903-905	: 2SK1824
IC901	: BU4094BCF
IC902	: LC75824W

TK-6110 TK-6110

BLOCK DIAGRAM



SPECIFICATIONS

GENERAL

Frequency Range	29.7 to 37.0MHz (K) 35.0 to 50.0MHz (K2)
Number of Channels	Maximum 32 channels
Channel Spacing	20kHz / 25kHz
PLL Channel Stepping	5kHz
Operating Voltage	13.6V DC
Current Drain	
Standby	0.6A
Receive	2.4A
Transmit	15.0A
Frequency Stability (–22°F to +140°F)	±0.0005%
Operating Temperature Range	–30°C to +60°C (–22°F to +140°F)
Antenna Impedance	50Ω
Dimensions (Not Including Protrusions)	6-1/4 in (160mm) W x 2 in (50mm) H x 6-1/4 in (160mm) D
Weight (Body only)	3.5 lbs (1.6kg)

RECEIVER (Measurements made per TIA/EIA-603)

Sensitivity (EIA 12dB SINAD)	0.25µV
Selectivity	75dB
Intermodulation	70dB
Spurious Response	70dB
Audio Power Output	10W at 4Ω less than 5% distortion
Channel Frequency Spread	7.3MHz (K) 15MHz (K2)

TRANSMITTER (Measurements made per TIA/EIA-603)

RF Power Output	70W
Harmonics	62dB
Modulation	16K0F3E
FM Noise	50dB
Microphone Impedance	600Ω
Audio Distortion	Less than 3%
Channel Frequency Spread	7.3MHz (K) 15MHz (K2)

KENWOOD follows a policy of continuous advancement in development.
For this reason specifications may be changed without notice.

TK-6110

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